Rocky Flats Environmental Technology Site

TYPE 1
RECONNAISSANCE LEVEL CHARACTERIZATION REPORT (RLCR)/PRE-DEMOLITION SURVEY REPORT (PDSR)

SEWAGE TREATMENT PLANT CLOSURE PROJECT
(Buildings T974A, 974, 977, 988, 988A, 995, 995-AB-1, 995-AB-2, 995-C-1, 995-C-2, 995-C-3, 995-C-4, 995-C-5, 995-IC1, 995-IC2 and 995-IC3)

REVISION 0

December 9, 2004

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REVISION 0

December 9, 2004

Reviewed by: _____ Date: 12/9/04
Don Risoli, Quality Assurance

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Approved by: _____ Date: 12/09/04
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ATTACHMENTS

ABBREVIATIONS/ACRONYMS

ACM	Asbestos containing material
Be	Beryllium
CDPHE	Colorado Department of Public Health and the Environment
CERCLA	Comprehensive Emergency Response, Compensation and Liability Act
$DCGL_{EMC}$	Derived Concentration Guideline Level – elevated measurement comparison
$DCGL_W$	Derived Concentration Guideline Level – Wilcoxon Rank Sum Test
D&D	Decontamination and Decommissioning
DDCP	Decontamination and Decommissioning Characterization Protocol
DOE	U.S. Department of Energy
DPP	Decommissioning Program Plan
DQA	Data quality assessment
DQOs	Data quality objectives
EPA	U.S. Environmental Protection Agency
FDPM	Facility Disposition Program Manual
HVAC	Heating, ventilation, air conditioning
HSAR	Historical Site Assessment Report
IHSS	Individual Hazardous Substance Site
IWCP	Integrated Work Control Package
K-H	Kaiser-Hill
LBP	Lead-based paint
LLW	Low-level waste
MARSSIM	Multi-Agency Radiation Survey and Site Investigation Manual
MDA	Minimum detectable activity
MDC	Minimum detectable concentration
NORM	Naturally occurring radioactive material
NRA	Non-Rad-Added Verification
OSHA	Occupational Safety and Health Administration
PARCC	Precision, accuracy, representativeness, comparability and completeness
PCBs	Polychlorinated Biphenyls
PDS	Pre-demolition survey
QC	Quality Control
RCRA	Resource Conservation and Recovery Act
RFCA	Rocky Flats Cleanup Agreement
RFETS	Rocky Flats Environmental Technology Site
RFFO	Rocky Flats Field Office
RLC	Reconnaissance Level Characterization
RLCR	Reconnaissance Level Characterization Report
RSP	Radiological Safety Practices
SVOCs	Semi-volatile organic compounds
TCLP	Toxicity Characteristic Leaching Procedure
TSA	Total surface activity
VOCs	Volatile organic compounds

EXECUTIVE SUMMARY

A Reconnaissance Level Characterization (RLC) and Pre-Demolition Survey (PDS) was performed to enable facility "Typing" per the DPP (10/8/98), and compliant disposition and waste management of Sewage Treatment Plant Buildings T974A, 974, 977, 988, 988A, 995, 995-AB-1, 995-AB-2, 995-C-1, 995-C-2, 995-C-3, 995-C-4, 995-C-5, 995-IC1, 995-IC2 and 995-IC3. Because some of these facilities were "anticipated" Type 1 and Type 2 facilities, the characterization was performed in accordance with the Pre-Demolition Survey Plan (MAN-127-PDSP) requirements. All facility surfaces were characterized in this RLC/PDS including the interior and exterior surfaces. Environmental media beneath and surrounding the facilities were not within the scope of this RLCR/PDSR and will be addressed at a future date using the Soil Disturbance Permit process and in compliance with RFCA.

The RLC/PDS encompassed both radiological and chemical characterization to enable compliant disposition and waste management pursuant to the D&D Characterization Protocol (MAN-077-DDCP). The characterization built upon physical, chemical and radiological hazards identified in the facility-specific Historical Site Assessment Reports.

Results indicate that no radiological contamination exists in excess of the PDSP unrestricted release limits of DOE Order 5400.5. All beryllium sample results were less than 0.1 $\mu g/100cm^2$. All bulk sample results of building materials suspected of containing asbestos were negative or "None Detected" except for roofing tar identified in Building 995. The composite roofing material (Category 1 non-friable asbestos roofing tar) will be managed and disposed of as sanitary waste during demolition activities. This asbestos All demolition debris will be managed in compliance with regulations governing PCBs (40 CFR 761), and Environmental Compliance Guidance #27, *Lead-Based Paint (LBP) and Lead-Based Paint Debris Disposal,* as applicable. The water depletion issue will be addressed in the Adaptive Management Plan and the RI/FS.

Based upon the data presented in this RLCR/PDSR, Sewage Treatment Plant Buildings in this report are considered Type 1 facilities. To ensure the facilities remain free of contamination and RLC/PDS data remain valid, Level 2 Isolation Controls have been established and the facilities posted accordingly.

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1 INTRODUCTION

A Reconnaissance Level Characterization (RLC) and a Pre-Demolition Survey (PDS) was performed to enable compliant disposition and waste management of the Sewage Treatment Plant Buildings T974A, 974, 977, 988, 988A, 995, 995-AB-1, 995-AB-2, 995-C-1, 995-C-2, 995-C-3, 995-C-4, 995-C-5, 995-IC1, 995-IC2 and 995-IC3. All facility surfaces were characterized in this RLC/PDS, including the interior and exterior surfaces of the facilities. Environmental media beneath and surrounding the facilities were not within the scope of this RLCR/PDSR and will be addressed at a future date using the Soil Disturbance Permit process and in compliance with RFCA.

An RLCR was previously submitted for Buildings T974A, 988, 988A and 995 as part of the Area 5-Group 16 RLCR, dated September 2003. The Area 5-Group 16 RLCR was only partially concurred with by CDPHE. CDPHE RFCA Type 1 concurrence of Buildings T974A, 988, 988A and 995 was not given in the Area 5-Group 16 RLCR because portions of the Sanitary Treatment System were still in operation at the time of the RLC, thus some of the systems and surfaces were not completely available for characterization. The Sanitary Treatment System has since been shutdown and the previously inaccessible systems and surfaces in these buildings have been adequately characterized; the recent results are contained within this re-submitted RLCR/PDSR. In addition to characterizing the previously inaccessible systems and surfaces, all of the initial radiological surveys of the building surfaces were re-performed for these buildings and reported in this RLCR/PDSR.

Buildings 995-C-5, 995-CCC-1, 995-CCC-2, 995-IC1, 995-IC2 and 995-IC3 were "anticipated" Type 1 RFCA facilities prior to the performance of this RLC/PDS effort. Since they were found to be uncontaminated during the performance of this RLC/PDS effort, these buildings are reported in this RLCR/PDSR as Type 1 RFCA facilities.

Buildings 974, 977, 995-AB-1, 995-AB-2, 995-C-1, 995-C-2, 995-C-3 and 995-C-4, were "anticipated" Type 2 RFCA facilities prior to the performance of this RLC/PDS effort. A Type 2 RLC had not been performed in these buildings yet because the Sewage Treatment System has been in operation until recently thus the majority of building surfaces were not accessible for characterization. Since these buildings were found to be uncontaminated during the performance of this RLC/PDS effort, these buildings are reported in this RLCR/PDSR as Type 1 RFCA facilities. Since the performance of this RLC/PDS effort was performed in accordance with the Pre-Demolition Survey Plan (MAN-127-PDSP), no further characterization of these buildings is necessary.

The remaining Sewage Treatment Plant buildings 990, 990A, 995-EC1, 995-EC2, and 995-EC3 have already been characterized and documented in stand-alone RLCRs and review and concurred with by the DOE and CDPHE. Remaining Sewage Treatment Plant buildings 995-CCC-1, 995-CCC-2, 995-D1 and 995-D2 will be characterized in the future and a documented stand-alone RLCR will be submitted to the DOE and CDPHE for review and concurrence.

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As part of the Rocky Flats Environmental Technology Site (RFETS) Closure Project, numerous facilities will be removed. Among these are the Sewage Treatment Plant Buildings In this report. The location of these facilities is shown in Attachment A, *Facility Location Map*. These facilities no longer support the RFETS mission and will be removed to reduce Site infrastructure, risks and/or operating costs.

Before these facilities can be removed or demolished, an RLC and/or a PDS must be conducted; this document presents the RLC/PDS results. The RLC/PDS was conducted pursuant to the Decontamination and Decommissioning Characterization Protocol (MAN-077-DDCP) and the Pre-Demolition Survey Plan for D&D Facilities (MAN-127-PDSP). The RLC/PDS built upon physical, chemical and radiological hazards identified in the facility-specific Historical Site Assessment Reports.

1.1 Purpose

The purpose of this report is to communicate and document the results of the RLC/PDS effort. An RLC and /or PDS is performed before building demolition to define the pre-demolition radiological and chemical conditions of a facility. Pre-demolition conditions are compared with the unrestricted release limits for radiological and non-radiological contaminants. RLC/PDS results will enable project personnel to make final disposition decisions, develop related worker health and safety controls, and estimate waste volumes by waste types.

1.2 Scope

This report presents the pre-demolition radiological and chemical conditions of the Sewage Treatment Plant Buildings T974A, 974, 977, 988, 988A, 995, 995-AB-1, 995-AB-2, 995-C-1, 995-C-2, 995-C-3, 995-C-4, 995-C-5, 995-IC1, 995-IC2 and 995-IC3. Environmental media beneath and surrounding the facilities was not within the scope of this RLCR/PDSR and will be addressed using the Soil Disturbance Permit process and in compliance with RFCA.

1.3 Data Quality Objectives

The Data Quality Objectives (DQOs) used in designing this RLC/PDS were the same DQOs identified in the Pre-Demolition survey Plan for D&D Facilities (MAN-127-PDSP.) Refer to section 2.0 of MAN-127-PDSP for these DQOs.

2 HISTORICAL SITE ASSESSMENT

A facility-specific Historical Site Assessment (HSA) was conducted to understand the facility histories and related hazards. The assessment consisted of facility walk-downs, interviews, and document review, including review of the Historical Release Report (refer to the D&D Characterization Protocol, MAN-077-DDCP). These assessments were used to identify data gaps and needs, and to develop radiological and chemical characterization plans. The facility-specific HSAs are documented in the *Historical Site Assessment Report (HSAR) for the Area 5-Group 17 facilities*, Dated April, 2003, Revision 1 and the *Historical Site Assessment Report (HSAR) for the Area 5-Group 16 facilities*, Dated December 2002, Revision 0. Refer to Attachment B, *Historical Site*

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Assessment Reports, for a copy of the facility-specific HSARs. In summary, the HSARs identified minimal potential for radiological and chemical hazards in Sewage Treat Plant Buildings.

3 RADIOLOGICAL CHARACTERIZATION AND HAZARDS

Sewage Treatment Plant Buildings In this report were characterized for radiological hazards per the PDSP. Radiological characterization was performed to define the nature and extent of radioactive materials that may be present on the facility surfaces. Measurements were performed to evaluate the contaminants of concern. Based upon a review of historical and process knowledge, building walk-downs, and MARSSIM guidance, a Radiological Characterization Plan was developed during the planning phase that describes the minimum survey requirements (refer to the RISS Characterization Project files).

Fifteen (15) radiological survey packages were developed for the interior and exterior surfaces of Sewage Treatment Plant Buildings. The survey packages were developed in accordance with Radiological Safety Practices (RSP) 16.01, *Radiological Survey/Sampling Package Design, Preparation, Control, Implementation and Closure.* All survey units were MARSSIM Class 3 areas based on process history and the low potential for residual contamination. Total surface activity (TSA), removable surface activity (RSA), and scan measurements were collected in accordance with RSP 16.02 *Radiological Surveys of Surfaces and Structures.* Radiological survey data were verified, validated and evaluated in accordance with RSP 16.04, *Radiological Survey/Sample Data Analysis.* Quality control measures were implemented relative to the survey process in accordance with RSP 16.05, *Radiological Survey/Sample Quality Control.* Survey Unit 995 MST was developed to account for the various structures and equipment associated with the 995 sewage treatment plant that are located outside of the designated building survey units.

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The following table details the radiological data that was obtained:

BLDG	Description	Survey Unit	TSAs	TSA QCs	RSAs	Scans %
T974A	Modified Semi-Trailer	974002	30	2	30	5
974	Drying Beds 1-4 Building	974001	30	2	30	50-floors 10-other
977	Drying Beds 5-7 Building	977002	30	2	30	50-floors 10-other
988	Tertiary Treatment Pump House	988003	30	2	30	5
988A	Ultraviolet Disinfecting Facility	988A01	30	2	30	25
995	Main Support and Lab Building	995006	45	3	45	5
995-AB-1	Aeration Basin #1	995AB1	30	2	30	25
995-AB-2	Aeration Basin #2	995AB2	30	2	30	25
995-C-1	Clarifier Basin #1	995C01	25	2	25	25
995-C-2	Clarifier Basin #2	995C02	25	2	25	25
995-C-3	Clarifier Basin #3	995C03	25	2	25	25
995-C-4	Clarifier Basin #4	995C04	25	2	25	25
995-C-5	Clarifier Basin #5	995C05	20	2	20	20
995-IC1	Influent Cells #1, #2 and #3	9953IC	35	2	35	20
995 area	Miscellaneous structures	995MST	50	2	50	15

RLC/PDS data confirmed that these facilities do not contain radiological contamination above the surface contamination guidelines provided in the PDSP. Radiological survey data, statistical analysis results, and survey locations are presented in Attachment C, *Radiological Data Summary and Survey Maps*. Radiological survey unit packages are maintained in the RISS Characterization Project files. Level 2 Isolation Control postings are displayed on the facilities to ensure no radioactive materials are inadvertently introduced.

4 CHEMICAL CHARACTERIZATION AND HAZARDS

Sewage Treatment Plant Buildings In this report were characterized for chemical hazards per the PDSP. Chemical characterization was performed to determine the nature and extent of chemical contamination that may be present on, or in the facilities. Based upon a review of historical and process knowledge, visual inspections, and PDSP DQOs, additional sampling needs were determined. A Chemical Characterization Plan (refer to RISS Characterization Project files) was developed during the planning phase that describes sampling requirements, the justification for the sample locations and estimated sample numbers. Contaminants of concern included asbestos, beryllium, RCRA/CERCLA constituents, lead and PCBs. Refer to Attachment D, *Chemical Data Summaries and Sample Maps*, for details on sample results and sample locations

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4.1 Asbestos

A survey of building materials suspected of containing asbestos was conducted in the Sewage Treatment Plant-Buildings In this report in accordance with the PDSP. A CDPHE-certified asbestos inspector conducted the inspection in accordance with the *Asbestos Characterization Protocol, PRO-563-ACPR, Revision 1.* Building materials suspected of containing asbestos were identified for sampling at the discretion of the inspector.

No building materials suspected of containing asbestos were identified during the visual and tactile inspection of Buildings T974A, 974, 977, 988, 995-AB-1, 995-AB-2, 995-C-1, 995-C-2, 995-C-3, 995-C-4, 995-C-5, 995-IC1, 995-IC2 or 995-IC3, therefore, asbestos sampling was not performed as part of the RLC/PDS in these buildings. Only Buildings 995 and 988A had the potential for asbestos containing building materials. Asbestos was detected in the black fibrous tar of the basement roof of Building 995. All other laboratory results of bulk samples taken in Buildings 995 and 988A were "None Detected". Refer to Attachment D, *Chemical Data Summaries and Sample Maps*, for details on sample results and sample locations.

4.2 Beryllium (Be)

Based on the HSAR and personnel interviews, the Sewage Treatment Plant Buildings in this report were not expected to contain beryllium contamination. However, there was not adequate historical and process knowledge to conclude that beryllium was not processed or stored in these facilities. Therefore, biased beryllium sampling was performed in accordance with the PDSP and the *Beryllium Characterization Procedure, PRO-536-BCPR, Revision 0, September 9, 1999.* Biased sample locations corresponded with the most probable areas of dust accumulation (including beryllium dust), assuming airborne deposition.

All beryllium smear sample results were less than 0.1 $\mu g/100cm^2$ and meet the unrestricted release limits. Previously collected beryllium samples from the original submittal of the RLCR for Buildings T974A, 988, 988A and 995 are also included with more recent samples collected in these buildings. Beryllium laboratory sample data and location maps are contained in Attachment D, *Chemical Data Summaries and Sample Maps*.

4.3 RCRA/CERCLA Constituents [including metals and volatile organic compounds (VOCs)]

Based on a review of the HSAR, and facility walk-downs, the Sewage Treatment Plant Buildings in this report are part of the RFETS sanitary waste treatment system, and are downstream of the B990 basins that contained sludge which exceeded the Wildlife Refuge Worker limits for metals. TCLP analysis is pending to determine if the B990 sludge will exceed RCRA limits. However, there is no remaining residual sludge or solids in the facilities specific to this RLCR, and there is no reason to suspect that the facilities have been contaminated at RCRA/CERCLA levels. On this basis, no RCRA/CERCLA sampling was performed as part of this RLC/PDS.

Sampling for lead in paint in the Sewage Treatment Plant Buildings in this report was not performed based on the fact that the only lead concern would be in the paint. Environmental Waste Compliance Guidance #27, *Lead-based Paint (LBP) and Lead-based paint Debris Disposal*, states that LBP debris generated outside of currently identified high contamination areas shall be managed as non-hazardous (solid) wastes, and additional analysis for characteristics of hazardous waste derived from LBP is not a requirement for disposal.

4.4 Polychlorinated Biphenyls (PCBs)

Based on the HSAR, interviews and a facility walk-down of the Sewage Treatment Plant Buildings in this report, there is no historical knowledge or evidence of PCB contamination. Therefore, PCB sampling was not performed as part of the RLC/PDS. Prior to demolition, all fluorescent light ballasts will be inspected, and any leaking PCB ballasts will be removed. Additionally, large ballasts (those weighing more than 9lbs) will be removed, leaking or not.

5 PHYSICAL HAZARDS

Physical hazards associated with the Sewage Treatment Plant Buildings in this report consist of those common to standard industrial environments and include hazards associated with energized systems, utilities, and trips and falls. However, care should be taken during demolition activities as all Sewage Treatment Plant Buildings are located near PAC 000-500 "Sanitary Sewer System – Active". The facilities have been relatively well maintained and are in good physical condition, therefore, do not present hazards associated with building deterioration. Walkways with handrails are erected around the tops of the cells and basins to prevent personnel from falling in. Physical hazards are controlled by the Site Occupational Safety and Industrial Hygiene Program, which is based on OSHA regulations, DOE orders, and standard industry practices.

6 DATA QUALITY ASSESSMENT

Data used in making management decisions for decommissioning of the Sewage Treatment Plant Buildings in this report and consequent waste management, are of adequate quality to support the decisions documented in this report. The data presented in this report (Attachments C and D) were verified and validated relative to DOE quality requirements, applicable EPA guidance, and original DQOs of the project.
In summary, the Verification and Validation (V&V) process corroborates that the following elements of the characterization process are adequate:

- the *number* of samples and surveys;
- the *types* of samples and surveys;
- the sampling/survey process as implemented "in the field"; and,
- the laboratory analytical process, relative to accuracy and precision considerations.

Details of the DQA are provided in Attachment E.

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7 DECOMMISSIONING WASTE TYPES AND VOLUME ESTIMATES

The demolition and disposal of the Sewage Treatment Plant Buildings in this report will generate sanitary waste only. Estimated waste volumes are presented below. All waste can be disposed of as sanitary waste. The remaining composite roofing material (Category 1 non-friable asbestos roofing tar) will be managed and disposed of as sanitary waste during demolition activities. There is no radioactive or hazardous waste.

Waste Volume Estimates and Material Types							
Facility	**Concrete** (cu ft)	**Wood** (cu ft)	**Metal** (cu ft)	**Corrugated Sheet Metal** (cu ft)	**Wall Board** (cu ft)	**ACM** (cu ft)	**Other Waste** (cu ft)
T974A	0	0	400	0	0	0	NONE
974	1,200	0	300	500	0	0	NONE
977	1,500	0	400	600	0	0	NONE
988	2,000	0	200	400	0	0	NONE
988A	400	0	200	200	0	0	NONE
995	6,000	0	800	0	700	50	NONE
995-AB-1	600	0	100	0	0	0	NONE
995-AB-2	600	0	100	0	0	0	NONE
995-C-1	300	0	50	0	0	0	NONE
995-C-2	500	0	100	0	0	0	NONE
995-C-3	800	0	200	0	0	0	NONE
995-C-4	800	0	200	0	0	0	NONE
995-C-5	800	0	200	0	0	0	NONE
995-IC1	2,400	0	200	0	0	0	NONE
995-IC2	2,400	0	200	0	0	0	NONE
995-IC3	2,400	0	200	0	0	0	NONE

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8 FACILITY CLASSIFICATION AND CONCLUSIONS

Based on the analysis of radiological, chemical and physical hazards, the Sewage Treatment Plant Buildings T974A, 974, 977, 988, 988A, 995, 995-AB-1, 995-AB-2, 995-C-1, 995-C-2, 995-C-3, 995-C-4, 995-C-5, 995-IC1, 995-IC2, and 995-IC3 are classified as RFCA Type 1 facilities pursuant to the RFETS Decommissioning Program Plan (DPP; K-H, 1999) and are acceptable for demolition. The Type 1 classification is based on a review of historical and process knowledge, and newly acquired RLC data.

The RLC of the Sewage Treatment Plant Buildings in this report was performed in accordance with the DDCP and PDSP requirements. All PDSP DQOs were met, and all data satisfied the PDSP DQA criteria. The Sewage Treatment Plant Buildings in this report do not contain radiological or hazardous waste. The remaining composite roofing material (Category 1 non-friable asbestos roofing tar) will be managed and disposed of as sanitary waste during demolition activities. All demolition debris will be managed as sanitary waste.

Environmental media beneath and surrounding the facilities will be addressed at a future date using the Soil Disturbance Permit process and in compliance with RFCA. The water depletion issue will be addressed in the Adaptive Management Plan and the RI/FS. To ensure the Sewage Treatment Plant Buildings in this report remain free of contamination and RLC data remain valid, Level 2 Isolation Controls have been established with the required postings to prevent the inadvertent introduction of contaminants.

9 REFERENCES

DOE/RFFO, CDPHE, EPA, 1996. *Rocky Flats Cleanup Agreement (RFCA),* July 19, 1996.

DOE Order 5400.5, *"Radiation Protection of the Public and the Environment."*

EPA, 1994. *"The Data Quality Objective Process,"* EPA QA/G-4.

K-H, 1999. *Decommissioning Program Plan,* June 21, 1999.

MAN-131-QAPM, *Kaiser-Hill Team Quality Assurance Program,* Rev. 1, November 1, 2001.

MAN-076-FDPM, *Facility Disposition Program Manual,* Rev. 3, January 1, 2002.

MAN-077-DDCP, *Decontamination and Decommissioning Characterization Protocol,* Rev. 3, July 15, 2002.

MAN-127-PDSP, *Pre-Demolition Survey Plan for D&D Facilities,* Rev. 1, July 15, 2002.

MARSSIM - *Multi-Agency Radiation Survey and Site Investigation Manual,* December 1997 (NUREG-1575, EPA 402-R-97-016).

PRO-475-RSP-16.01, *Radiological Survey/Sampling Package Design, Preparation, Control, Implementation, and Closure,* Rev. 1, May 22, 2001.

PRO-476-RSP-16.02, *Pre-Demolition (Final Status) Radiological Surveys of Surfaces and Structures,* Rev. 1, May 22, 2001.

PRO-477-RSP-16.03, *Radiological Samples of Building Media,* Rev. 1, May 22, 2001.

PRO-478-RSP-16.04, *Radiological Survey/Sample Data Analysis for Final Status Survey,* Rev. 1, May 22, 2001.

PRO-479-RSP-16.05, *Radiological Survey/Sample Quality Control for Final Status Survey,* Rev. 1, May 22, 2001.

PRO-563-ACPR, *Asbestos Characterization Procedure,* Revision 0, August 24, 1999.

PRO-536-BCPR, *Beryllium Characterization Procedure,* Revision 0, August 24, 1999.

RFETS, *Environmental Waste Compliance Guidance #25, Management of Polychlorinated Biphenyls (PCBs) in Paint and Other Bulk Product Waste During Facility Disposition.*

RFETS, *Environmental Waste Compliance Guidance #27, Lead-Based Paint (LBP) and Lead-Based Paint Debris Disposal.*

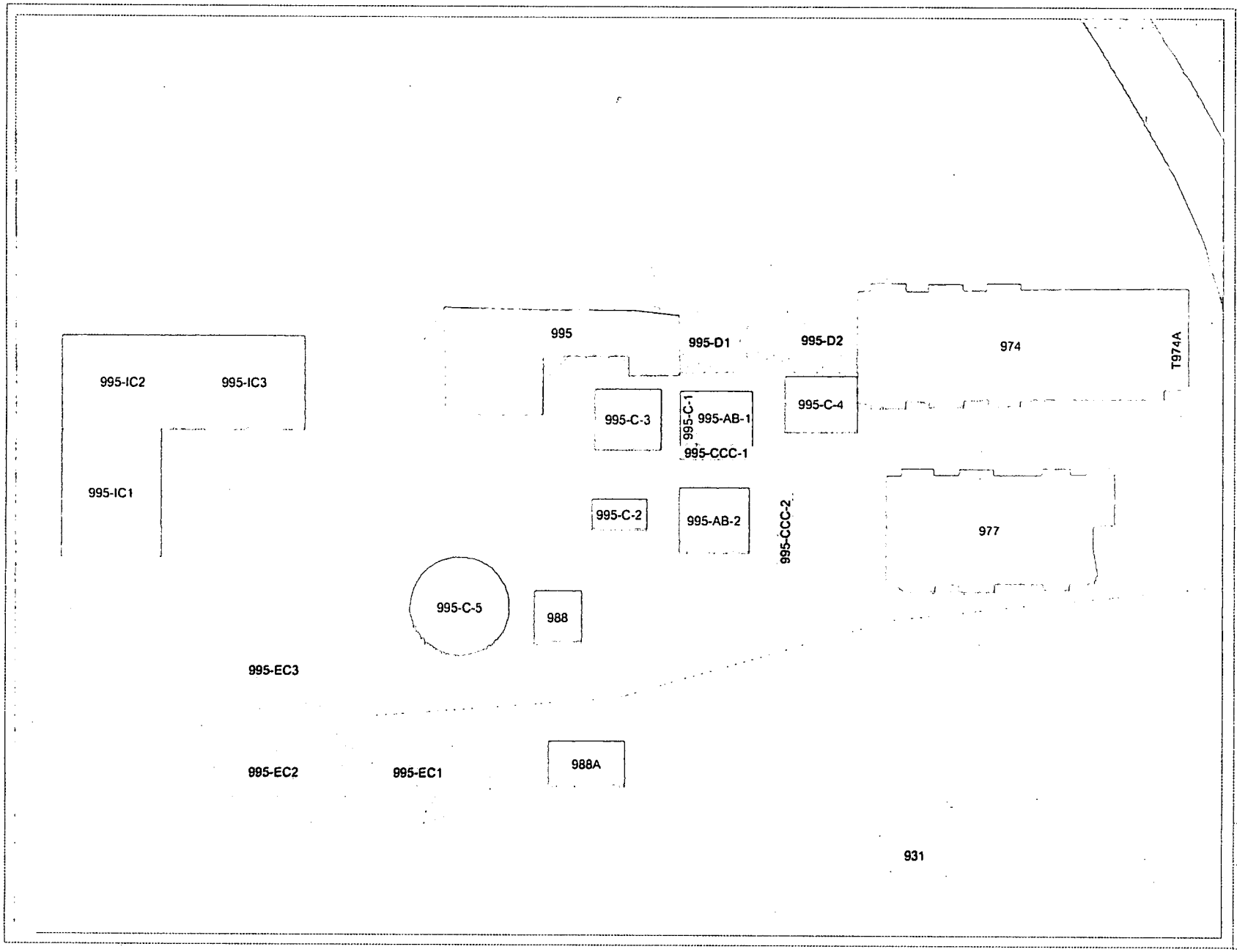
RFCA Standard Operation Protocol for Recycling Concrete, September 28, 1999.

Historical Site Assessment Report for the Area 5-Group 16 facilities, Dated December 2002, Revision 0.

Historical Site Assessment Report (HSAR) for the Area 5 - Group 17 facilities, Dated April 2003, Revision 1.

ATTACHMENT A

Facility Location Map



Rocky Flats Environmental Technology Site

Sewage Treatment Overview

Map Features

- Buildings Remaining
  - 974
  - 977
  - 988
  - 988A
  - 995
  - 995-AB-1
  - 995-AB-2
  - 995-C-1
  - 995-C-2
  - 995-C-3
  - 995-C-4
  - 995-C-5
  - 995-IC1
  - 995-IC2
  - 995-IC3
  - T974A
- D&D Facility
- Paved Roads
- Dirt Roads
- Railroad Removed
- Railroad Remaining
- Fence Removed
- Fence Remaining
- Streams

N

1:177
1 inch equals 15 feet

State Plane Coordinate Projection
Colorado Central Zone (3476)
Datum: NAD27

U.S. Department of Energy
Rocky Flats Environmental Technology Site

GIS Dept (303) 966-7707

CH2MHILL

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ATTACHMENT B

Historical Site Assessment Reports

D&D RISS Facility Characterization
Historical Site Assessment Report
April, 2003 Rev. 1

Facility ID: (AREA 5 - GROUP 17)

Anticipated Facility Type (1, 2, or 3): Buildings 988A, 995-CCC-1, 995-CCC-2, 995-C-5, 995-EC1, 955-EC2, 995-EC3, 995-IC1, 995-IC2, and 995-IC3 are anticipated Type 1 facilities.

Buildings 974, 977, 995-AB-1 995-AB-2, 995-C-1, 995-C-2, 995-C-3, 995-C-4, 995-D1, and 995-D2 are anticipated Type 2 facilities.

This facility-specific Historical Site Assessment (HSA) has been performed in accordance with:
D&D Characterization Protocol, RFETS MAN-077-DDCP, latest version, and
Facility Disposition Program Manual, RFETS MAN-076-FDPM, latest version

Physical Description

Building 974

Building 974 is a 2,280 square-foot non-insulated metal building, used to house 4 sludge drying beds. The drying beds were originally only covered by a roof, but where enclosed in the late 1980s. The original drying beds were constructed of sand. In the late 1980s, concrete drying beds where constructed over the original sand drying beds.

Building 974 has the following utilities: electric.

Building 977

Building 977 is a 2,880 square-foot non-insulated metal building, used to house 4 sludge drying beds. The drying beds were originally only covered by a roof, but where enclosed in the late 1980s or early 1990s. The original drying beds were constructed of sand. In the late 1980s, concrete drying beds where constructed over the original sand drying beds. Building 977 has the following utilities: electric.

Building 988A

Building 988A is the 432 square-foot building constructed in 1996. This building is constructed of insulted metal sections mounted to a steel frame and a concrete floor.

Building 988A has the following utilities: electric.

Aeration Basins 995-AB-1 and 995-AB-2

The aeration basins are each approximately 625 square-feet and constructed of concrete. The north aeration basin (995-AB-1) was constructed in 1953 and the south aeration basin (995-AB-2) was constructed in the mid 1970s. These basins are open topped basins and are equipped with air diffusers to assist in the aeration process. The compressors used to aerate the basins are located in Building 988.

The Aeration Basins have the following utilities: electric.

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Chlorine Contact Basins 995-CCC-1 and 995-CCC-2

Chlorine Contact Basins 995-CCC-1 is approximately 65 square-feet. Chlorine Contact Basins 995-CCC-2 is approximately 200 square-feet. Both basins where built in 1953 and are constructed of concrete.

The Chlorine Contact Basins have the following utilities: electric.

Clarifier Basins 955-C-1, 995-C-2, 995-C-3, 995-C-4 and 995-C-5

Clarifier Basins 955-C-1 is approximately 200 square feet, 995-C-2 is approximately 300 square-feet, 995-C-3 is approximately 600 square-feet, 995-C-4 is approximately 650 square feet, and 995-C-5 is approximately 600 square-feet. Clarifier 995-C-1, 995-C-3, and 995-C-4, are concrete basins constructed as in 1953. Clarifier 995-C-2 and 995-C-5 are concrete basins constructed in the 1970s.

The Clarifier Basins have the following utilities: electric.

Digesters 995-D1 and 995-D2

The Digesters Basins 995-D1 and 995-D2 are approximately 500 square-foot concrete basins constructed in 1953.

The Digester Basins have the following utilities: electric.

Effluent Cells 995-EC1, 955-EC2 and 995-EC3,

The wastewater treatment plant has three 1,836 square-foot effluent cells that were constructed in 1996. These effluent treatment cells are concrete basins used to temporarily store wastewater prior to discharge to the B-Series Ponds. The effluent cells are located south east of Building 995.

The Effluent Cells have the following utilities: electric.

Influent Cells 995-IC1, 995-IC2 and 995-IC3.

The wastewater treatment plant has three 1,271 square-foot influent cells and that were constructed in 1996. These influent storage cells are concrete basins used to temporarily store wastewater entering the wastewater treatment facility and are located west of Building 995.

The Influents Cells have the following utilities: electric.

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Historical Operations

Building 974

The west side of Building 974 houses drying beds 1, 2, 3, and 4. The east side of Building 974 is used for general storage and houses some old out-of-service sludge drying equipment. Building 974 originally had sand drying beds and was an open-sided structure. In the late 1980s walls were added to the structure and the current concrete drying beds where constructed over the existing sand beds. These upgrades where performed to prevent wind-blown dispersion of the sludge and help prevent the occasional overflow from the sludge drying beds. PAC 900-141 "Sludge Dispersal" details some of the earlier events related to the sludge drying beds. PAC 900-141 had its NFA approved in 1997. Historically the sanitary sludge was designated as low-level waste. In the summer of 2002 the low-level waste designation was removed.

Building 977

Building 977 houses drying beds 5, 6 and 7. Building 977 originally had sand drying beds and was an open-sided structure. In the late 1980s walls were added to the structure and the current concrete drying beds where constructed over the existing sand beds. These upgrades where performed to prevent wind-blown dispersion of the sludge and help prevent the occasional overflow from the sludge drying beds. PAC 900-141 "Sludge Dispersal" details some of the earlier events related to the sludge drying beds. PAC 900-141 141 had its NFA approved in 1997. Historically the sanitary sludge was designated as low-level waste. In the summer of 2002 the low-level waste designation was removed.

Building 988A

Building 988A is the Ultraviolet Disinfecting Facility and delivers a lethal does of ultraviolet light to any microorganisms remaining in the treated wastewater prior to being discharged to the B-Series Ponds.

Aeration Basins 995-AB-1 and 995-AB-2

The aeration basins are used to aerate the sewage to encourage bacterial growth.
Sludge from the primary clarifier enters the aeration basin were it is mixed and aerated to promote biological decomposition of organic constituents in the wastewater.

Chlorine contact chambers 995-CCC-1 and 995-CCC-2

The chlorine contact basins are used to chlorinate the wastewater during the waste waster treatment process.

Clarifier Basins 955-C-1, 995-C-2, 995-C-3 and 995-C-4

Clarifier Basin 995-C-1 and 995-C-2 is the primary clarifiers and are used to settle out solids after the wastewater is passed through the grit remover and the bar screen. The secondary clarifiers, 995-C-3 and 995-C-4, receive wastewater after it has been aerated to help settle out solid material. Flocculent (primarily lime and a cationic polymer) are added in the tertiary clarifier (995-C-5) to settle out finer solids. The sludge collected from the bottom of the primary, secondary and tertiary clerifiers are returned to the digester basins for further processing.

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Digesters 995-D1 and 995-D2,

Sludge from the clarifier basins is sent to the digesters where the activated sludge breaks down the organic constituents. The digester basins have heat exchanges connected to heaters located in Building 995. The digester must be kept at a constant temperature in maximize the microbial action in the digester.

Effluent Cells 995-EC1, 955-EC2 and 995-EC3,

The effluent tanks are used to store wastewater so they can be evaluated to determine whether they need to be treated or discharged The effluent and influent cells are connected by piping so their use is interchangeable

Influent Cells 995-IC1, 995-IC2 and 995-IC3.

The primary purpose of the influent cells it to equalize flow to the wastewater treatment facility and prevent any toxic constituents from reaching the activated sludge system. The effluent and influent cells are connected by piping so their use is interchangeable

Current Operational Status

The facilities addressed in this HSA are all currently operational.

Contaminants of Concern

Asbestos

Describe any potential, likely, or known sources of Asbestos:

Building 995 has asbestos posting. None of the facilities addressed in this HSA have had a comprehensive building inspection.

Beryllium (Be)

Describe any potential, likely, or known Be production or storage locations:

None of the facilities addressed in this HSA are on the RFETS list of Historic and Present Beryllium Areas.

Summarize any recent Be sampling results:

There is not recent Be date for the facilities addressed in this HSA.

Lead

Describe any potential, likely, or known sources of Lead (e.g., paint, shielding, etc.):

Based on the age of some of the facilities addressed in this HSA, lead in paint should not be a concern. No processes containing lead were conducted in these facilities.

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RCRA/CERCLA Constituents

Describe any potential, likely, or known sources of RCRA/CERCLA constituents (e.g., chemical storage, waste storage, and processes):

The primary chemicals used in the wastewater treatment process were chlorine, lime and a polymer flocculent. The sanitary sewer system did not regularly receive RCRA/CERCLA Waste streams, but historically small volumes of acids, bases, solvents and photo developing chemical where discharged to the sanitary sewer system. See the IHSS, PAC, or UBC section for additional release information.

Describe any potential, likely, or known spill locations (and sources, if any):

A chromium Acid spill in 1989 killed the digestive microbes in the sanitary sewer system which caused inadequately treated waste to be discharged. This event was reported as part of the sanitary sewers system's NPDES permit.

Describe methods in which spills were mitigated, if any:

None.

PCBs

Describe any potential, likely, or known sources of PCBs (e.g., light ballasts, paints, equipment, etc.):

No PCB containing process where housed in any of the facilities addressed in this HSA. No process equipment containing PCBs were located in any of these facilities. Given the age of some of these facilities PCBs in paint may be a concern.

Describe any potential, likely, or known spill locations (and sources, if any):

No PCB spills occurred in any of the Facilities addressed in this HSA.

Describe methods in which spills were mitigated, if any:

No PCB spills occurred in any of the Facilities addressed in this HSA.

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Radiological Contaminants

Describe any potential, likely, or known radiological production or storage locations:

In the early days of RFETS operations low levels of radioactive material in waste was discharged to the sanitary sewer system. This practice was stopped in the 1970s. The 1969 plutonium fire also caused a discharge of radiological material to the sanitary sewer system. The elevated radiological material in the system was primarily caused by firewater used to control the fire entering the system through the floor drains in the effected areas. PAC 000-500, "Sanitary Sewer System" describes some of the releases to the sanitary sewer system. See the IHSS, PAC, or UBC section for additional release information.

Describe any potential, likely, or known spill locations (e.g., known leaking sealed radioactive sources, leaking waste drums, potentially contaminated drains, etc.):

PAC 000-500, "Sanitary Sewer System" describes some of the releases to the sanitary sewer system. See the IHSS, PAC, or UBC section for additional release information.

Describe methods in which spills were mitigated, f any:

None.

Describe any potential, likely, or known isotopes of concern (e.g., weapons grade plutonium, uranium isotopes, pure beta emitters, mixed fission products, etc.):

Isotopes of concern include uranium and plutonium.

Describe any potential, likely, or known external facility contamination (e.g., stack release points, unfiltered ventilation, facility's physical location to known site releases, etc.):

See section below for information on IHSSs PACs, and UBCs.

Environmental Restoration Concerns

Describe any ER concerns that could affect facility characterization (e.g., IHSSs, PACs, UBCs):

Buildings 974, 977, 988A, and Basins 995-AB-1 995-AB-2, 995-CCC-1, 995-CCC-2, 955-C-1, 995-C-2, 995-C-3, 995-C-4, 995-D1, 995-D2, 995-EC1, 955-EC2, 995-EC3, 995-IC1, 995-IC2, and 995-IC3 are associated or effected by the following IHSSs, PACs, or UBCs. See individual IHSS, PAC, or UBC report for additional information.

1) PAC 000-500, "Sanitary Sewer System" Active

Building 974 and 977 are located on the following IHSSs, PACs, and UBCs. See individual IHSS, PAC, or UBC report for additional information.

1) PAC 900-141 "Sludge Disposal", NFA approved 1997.

Building 977 are located near the following IHSSs, PACs, and UBCs. See individual IHSS, PAC, or UBC report for additional information.

1) PAC 000-190 "Caustic Leak " Active.

Additional Information

Describe any additional information that may be useful during facility characterization (e.g., contaminant migration routes, waste handling operations, physical hazards, Historical Release Reports, WSRIC data, etc.):

None

References

Provide all sources of information utilized to gather data for facility history (e.g., documents, files, interviews):

Sources reviewed to complete this HSA were the RFETS Facility List, the Historical Release Report, Site Master List of RCRA Units, and the Site IHSS, PAC, and UBC databases. The WSRIC for those buildings with a WSRIC. In addition, a facility walkdown and interviews were performed.

Waste Volume Estimates and Material Types

Facility	Concrete (cu ft)	Wood (cu ft)	Metal (cu ft)	Corrugated Sheet Metal (cu ft)	Wall Board (cu ft)	ACM (cu ft)	Other Waste (cu ft)
Building 974	1,200	0	300	500	0	TBD	N/A
Building 977	1,500	0	400	600	0	TBD	N/A
Building 988A	400	0	200	200	0	TBD	N/A
995-AB-1	600	0	100	0	0	TBD	N/A
995-AB-2	600	0	100	0	0	TBD	N/A
995-CCC-1	100	0	25	0	0	TBD	N/A
995-CCC-2	600	0	100	0	0	TBD	N/A
955-C-1	300	0	50	0	0	TBD	N/A
955-C-2	500	0	100	0	0	TBD	N/A
955-C-3	800	0	200	0	0	TBD	N/A
955-C-4	800	0	200	0	0	TBD	N/A

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995-D1	1,000	0	200	0	0	TBD	N/A
995-D2	1,000	0	200	0	0	TBD	N/A
995-EC-1	3,200	0	300	0	0	TBD	N/A
995-EC-2	3,200	0	300	0	0	TBD	N/A
995-EC-3	3,200	0	300	0	0	TBD	N/A
995-IC1	2,400	0	200	0	0	TBD	N/A
995-IC2	2,400	0	200	0	0	TBD	N/A
995-IC3	2,400	0	200	0	0	TBD	N/A

Further Actions

Recommend any further actions, if any (e.g., characterization, decontamination, special handling, etc.):

Begin the RLC/PDS process.

Note:

This HSA was performed prior to SME walkdowns, and chemical and radiological characterization package preparations. SMEs should evaluate and/or verify all information during the RLC/PDS process. SMEs may need to review additional documentation and perform additional interviews. Information contained in this HSA only represents a "snapshot" in time. Subsequent data may be obtained during SME walkdowns and chemical and radiological characterization package preparations, which may conflict with this report. However, this report will not be amended, and the newer data will take precedence over the data in this report. Newer Data will appear in the RLCR/PDSR.

Prepared By: Duane Parsons / /s/ / April 2003

Name Signature Date

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D&D RISS Facility Characterization
Historical Site Assessment Report
December, 2002 Rev. 0

Facility ID: (AREA 5 - GROUP 16) Buildings 952, 988, 990, 990A, 995, and Trailer T974A.
Anticipated Facility Type (1, 2, or 3): Buildings 952, 988, 990, 990A, 995, and Trailer T974A are anticipated Type 1 facilities.

This facility-specific Historical Site Assessment (HSA) has been performed in accordance with:
D&D Characterization Protocol, RFETS MAN-077-DDCP, latest version, and
Facility Disposition Program Manual, RFETS MAN-076-FDPM, latest version

Physical Description

Building 952

Building 952 is a 100 square-foot building constructed in the late 1960s. This building is a non-insulated corrugated metal building mounted on a metal frame. Building 952 was constructed on a concrete slab and has a single entry door and several small vents on each of the four sides.

Building 952 has no utilities.

Building 988

Building 988 is a 1,224 square-foot building originally constructed in 1953 and modified in 1990. The original Building 988 was a cinder block building. In 1990 the building was enlarged. The roof was removed from the original building (the walls and floor remain) and the new structure was constructed around the old building. Under the building are the original wet well and dry well, which are still operational. Building 988 is an insulated concrete structure constructed on a concrete pad.

Building 988 has the following utilities: electric.

Building 990

Building 990 is a 222 square-foot building constructed in the early 1950s. Building 990 is a concrete cinder block building with a concrete foundation and a concrete slab roof and a built-up roofing system. Building 990 is a pre-aeration building that house two air compressors used to aerate raw swage in the north basin (constructed in the early 1950s) and the south basin (added in the 1970s).

Building 990 has the following utilities: electric.

Building 990A

Building 990A is a 200 square-foot building constructed in the early 1970s. Building 990A is a concrete cinder block building with a concrete foundation and a concrete slab roof with built-up roofing system. This building has a trench with a bar screen located in the floor slab.

Building 990A has the following utilities: electric.

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Building 995

Building 995 is a 6,000 square-foot building originally constructed in 1953. The original building was a poured concrete structure with a concrete foundation and a metal roof with a built-up roofing system. The building has had two additions added to the original structure. The first addition was in the late 1980s and was used to house upgraded monitoring instrumentation and increases the size of the on-site laboratory. The second addition was in the mid 1990s and added an additional on-site laboratory, office space, and restroom facilities. These additions were both constructed of concrete cinder block and a concrete foundation. The grit removed and Bar Screen for the wastewater treatment facility are free standing structures located east of Building 995 and do not have an individual facility number.

Building 995 has the following utilities: electric, natural gas, plant water, plant sanitary, and fire protection is provided by wall mounted fire extinguisher.

Trailer T974A

Trailer T974A is an 320 square-foot modified semi-truck trailer acquired in 1990. This trailer has aluminum sides and roof and a steel floor. This unit is considered a portable unit.

Building T974A has the following utilities: electric.

Historical Operations

Building 952

Building 952 was the Isolated Toxic Gas Storage Building and was operational from the mid 1960s to the mid 1980s. The building was used to store cylinders of toxic gasses. The area around the building was used to vent, neutralize and detoxified excess cylinders of gas. This activity is documented in PAC 900-183 "Gas Detoxification Area. This PAC had its NFA approved in 2001. See the 900-183 PAC for more information.

Building 988

Building 988 is the Tertiary Treatment Pump House and is used to house pumps, sand filters, and has a clear well and a dry well located under the floor slab. The original Building 988 had the roof removed and the large and newer Building 988 was constructed around the old building 988. See the Building Description above for more information about Building 988.

Building 990

Building 990 is the pre-aeration building and is used to house the compressors used to pre-aerate the raw sewage prior to entering the wastewater treatment plant. Raw sewage from both the PA and non-PA areas are piped to the diversion box near Building 990. Sewage may be directed to Building 995 or to the north or south basins (each 60,000 gallons) next to Building 990 as needed. Flow control at Building 990 may be used to regulate sewage during periods of high water usage or for containment of out of specification sewage. The north and south basins are large concrete basins with air diffusers located at the bottom of each basin. The north basin was part of the original Building 990 construction. The south basin was added in the early 1970s. This building and the north and south basins are operational but are normally only used during periods of high water generation.

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Building 990A

Building 990A houses a Bar-screen filtering unit and radiological monitoring equipment. Some believe that this building was constructed for security purposes and the Bar-screen and radiological monitoring equipment was used to detect and collect objects, which could be floated out of the process building via the sanitary sewer system.

Building 995

Building 995 was the main structure supporting the sanitary sewer system. This building houses support offices, on-site laboratories, furnaces and heat exchanger used to maintain a constant temperature in the system digesters. This building has been expanded several during its useful life. See Building Descriptions section above for more details on the building expansions. The sanitary sewer system received wastewater from a number of different sources. These sources include sinks, toilets, cooling tower blow-down, site laundry and floor drains from some areas in the process buildings. In the early days of operation, process waste with very low levels of radiological and chemical contamination was allowed to be discharge into the sanitary sewer system. This practice ended in the 1970s. In addition, during The 1969 Fire contaminated firewater entered the sanitary sewer system through floor drains. Treated waste is discharged to the B-Series ponds located northeast of the site.

Trailer T974A

Trailer T974A is a modified semi-truck trailer that housed a mobile sludge de-watering unit. This unit is used to de-water the sanitary sludge prior to the sludge being placed in the drying beds in Building 974 and 977.

Current Operational Status

The facilities addressed in this HSA are all currently operational.

Contaminants of Concern

Asbestos

Describe any potential, likely, or known sources of Asbestos:

Building 995 is the only building addressed in this HSA that has an asbestos posting. None of the facilities addressed in this HSA have had a comprehensive building inspection.

Beryllium (Be)

Describe any potential, likely, or known Be production or storage locations:

None of the facilities addressed in this HSA are on the RFETS list of Historic and Present Beryllium Areas.

Summarize any recent Be sampling results:

There is no recent Be data for the facilities addressed in this HSA.

Lead

Describe any potential, likely, or known sources of Lead (e.g., paint, shielding, etc.):

Based on the age of some of the facilities addressed in this HSA, lead in paint should not be a concern. No processes containing lead were conducted in these facilities.

RCRA/CERCLA Constituents

Describe any potential, likely, or known sources of RCRA/CERCLA constituents (e.g., chemical storage, waste storage, and processes):

The primary chemicals used in the wastewater treatment process were lime and a polymer additive. The sanitary sewer system did not regularly receive RCRA/CERCLA waste streams, but in the past small volume of acids, bases, solvents and photo developing chemical historically where released to the sanitary sewer system. See the IHSS, PAC, or UBC section for additional release information.

Describe any potential, likely, or known spill locations (and sources, if any):

A chromium acid spill in 1989 killed the digestive microbes in the sanitary sewer system, which caused under treated waste to be discharged. This event was reported as part of the sanitary sewers system's NPDES permit.

Describe methods in which spills were mitigated, if any:

None.

PCBs

Describe any potential, likely, or known sources of PCBs (e.g., light ballasts, paints, equipment, etc.):

No PCB containing processes were housed in any of the facilities addressed in this HSA. No process equipment containing PCBs were located in any of these facilities. Given the age of some of these facilities PCBs in paint may be a concern.

Describe any potential, likely, or known spill locations (and sources, if any):

No PCB spills occurred in any of the Facilities addressed in this HSA.

Describe methods in which spills were mitigated, if any:

No PCB spills occurred in any of the Facilities addressed in this HSA.

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Radiological Contaminants

Describe any potential, likely, or known radiological production or storage locations:

Building 952 is located inside the PAC 900-155 "900 Lip Area" which has alpha contamination.

In the early days of the operation, low levels of radioactive material in waste was discharged to the sanitary sewer system. This practice was stopped in the 1970s. The 1969 plutonium fire also caused a discharge of radiological material to the sanitary sewer system. The elevated radiological material in the system was primarily caused by firewater used to control the fire entering the system through the floor drains in the effected areas. PAC 000-500, "Sanitary Sewer System" describes some of the releases to the sanitary sewer system. See the IHSS, PAC, or UBC section for additional release information.

Describe any potential, likely, or known spill locations (e.g., known leaking sealed radioactive sources, leaking waste drums, potentially contaminated drains, etc.):

PAC 900-155 "900 Lip Area" see the 900-155 for more detail about this PAC.

Describe methods in which spills were mitigated, If any:

None.

Describe any potential, likely, or known isotopes of concern (e.g., weapons grade plutonium, uranium isotopes, pure beta emitters, mixed fission products, etc.):

Isotopes of concern include uranium and plutonium.

Describe any potential, likely, or known external facility contamination (e.g., stack release points, unfiltered ventilation, facility's physical location to known site releases, etc.):

See section below for information on IHSSs PACs, and UBCs.

Environmental Restoration Concerns

Describe any ER concerns that could affect facility characterization (e.g., IHSSs, PACs, UBCs):

Building 952 is located on or near the following IHSSs, PACs, or UBCs. See individual IHSS, PAC, or UBC report for additional information.

1) PAC 900-183 "Gas Detoxification Area" NFA Approved 2001.
2) PAC 900-155 "900 Lip Area", Active.
3) PAC 900-140 "Hazardous Disposal Area", Proposed NFA 1998.

Building 995, 988, 990, 990A T974A 974 and 977 are all associated with following IHSSs, PACs, or UBCs. See individual IHSS, PAC, or UBC report for additional information.

1) PAC 000-500, "Sanitary Sewer System" Active

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Additional Information

Describe any additional information that may be useful during facility characterization (e.g., contaminant migration routes, waste handling operations, physical hazards, Historical Release Reports, WSRIC data, etc.):

None

References

Provide all sources of information utilized to gather data for facility history (e.g., documents, files, interviews):

Sources reviewed to complete this HSA were the RFETS Facility List, the Historical Release Report, Site Master List of RCRA Units, and the Site IHSS, PAC, and UBC databases. The WSRIC for those buildings with a WSRIC. In addition, a facility walkdown and interviews were performed.

Waste Volume Estimates and Material Types

Facility	Concrete (cu ft)	Wood (cu ft)	Metal (cu ft)	Corrugated Sheet Metal (cu ft)	Wall Board (cu ft)	ACM (cu ft)	Other Waste (cu ft)
Building 952	200	0	100	250	0	TBD	N/A
Building 988	2000	0	200	400	0	TBD	N/A
Building 990	400	0	100	0	0	TBD	N/A
Building 990A	300	0	50	0	0	TBD	N/A
Building 995	6000	0	800	0	700	TBD	N/A
Trailer T974A	0	0	400	0	0	TBD	N/A

Further Actions

Recommend any further actions, if any (e.g., characterization, decontamination, special handling, etc.):

Begin the RLC/PDS process.

Note:

This HSA was performed prior to SME walkdowns, and chemical and radiological characterization package preparations. SMEs should evaluate and/or verify all information during the RLC/PDS process. SMEs may need to review additional documentation and perform additional interviews. Information contained in this HSA only represents a "snapshot" in time. Subsequent data may be obtained during SME walkdowns and chemical and radiological characterization package preparations, which may conflict with this report. However, this report will not be amended, and the newer data will take precedence over the data in this report. Newer Data will appear in the RLCR/PDSR.

Prepared By: Doug Bryant / /s/ / December 2002

Name Signature Date

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ATTACHMENT C

Radiological Data Summaries and Survey Maps

Survey Area: 5	Survey Unit: 974002	Building: T974A
Description: Building T974A Interior and Exterior		

Rocky Flats Environmental Technology Site
Final Radiological Survey Summary Results

Total Surface Activity Measurements

Nbr Random Measurements Required: 15 | Nbr Biased Measurements Required: 0 | Nbr QC Required: 2

Nbr Random Measurements Performed: 15 | Nbr Biased Measurements Performed: 15 | Nbr QC Performed: 2

Alpha

Maximum:	22.3 dpm/100cm²
Minimum:	-3.2 dpm/100cm²
Mean:	11.0 dpm/100cm²
Standard Deviation:	6.6
QC Maximum:	23.4 dpm/100cm²
QC Minimum:	16.1 dpm/100cm²
QC Mean:	19.8 dpm/100cm²
Transuranic DCGL$_W$:	100.0 dpm/100cm²
Transuranic DCGL$_{EMC}$:	300.0 dpm/100cm²

Removable Surface Activity Measurements

Nbr Random Measurements Required: 15 | Nbr Biased Measurements Required: 0

Nbr Random Measurements Performed: 15 | Nbr Biased Measurements Performed: 15

Alpha

Maximum:	4.5 dpm/100cm²
Minimum:	0.0 dpm/100cm²
Mean:	2.2 dpm/100cm²
Standard Deviation:	1.2
Transuranic DCGL$_W$:	20.0 dpm/100cm²

Media Sample Results

Nbr Random Required: 0 | Nbr Biased Required: 0

Nbr Random Collected: 0 | Nbr Biased Collected: 0

Conclusion - A comparison of the random, biased and QC measurement results against the PDSP Table 7-1 Surface Contamination Guideline limits was conducted; the comparison demonstrates that this survey unit passes the criterion specified in the PDSP.

Survey Area: 5	Survey Unit: 974002	Building: T974A
Description: Building T974A Interior and Exterior		

Instrument Data Sheet

Inst/RCT Number	RCT ID	Analysis Date	Instr Model	Instru S/N	Probe Type	Calibration Due Dt	Instru Efficiency		A-Priori MDA (dpm/100cm²)		Survey Type
							Alpha	Beta	Alpha	Beta	
1	700831	11/24/04	Electra	1415	DP-6	04/21/05	0.224	NA	48.0	NA	T/I/S
2	712467	11/24/04	Electra	3102	DP-6	05/18/05	0.220	NA	48.0	NA	Q/S
3	700831	11/29/04	SAC-4	924	NA	02/04/05	0.330	NA	10.0	NA	R
4	700831	11/29/04	SAC-4	952	NA	02/12/05	0.330	NA	10.0	NA	R

Survey Types: T = Total Surface Activity, Q = TSA QC, S = Scan, R = Removable Surface Activity, I = Investigation

Survey Area: 5	Survey Unit: 974002	Building: T974A
Description: Building T974A Interior and Exterior		

Random Removable Surface Activity Data Sheet

Random Measurement Location	Inst / RCT Nbr	Net Alpha (dpm/100cm²)	Net Beta (dpm/100cm²)	
974002PRP-N001	3	1.5	N/A	
974002PRP-N002	4	0.0	N/A	
974002PRP-N003	3	1.5	N/A	
974002PRP-N004	4	1.5	N/A	
974002PRP-N005	3	1.5	N/A	
974002PRP-N006	4	3.0	N/A	
974002PRP-N007	3	4.5	N/A	
974002PRP-N008	4	1.5	N/A	
974002PRP-N009	3	1.5	N/A	
974002PRP-N010	4	3.0	N/A	
974002PRP-N011	3	1.5	N/A	
974002PRP-N012	4	1.5	N/A	
974002PRP-N013	3	1.5	N/A	
974002PRP-N014	4	0.0	N/A	
974002PRP-N015	3	3.0	N/A	

Survey Area: 5	Survey Unit: 974002	Building: T974A
Description: Building T974A Interior and Exterior		

Biased Removable Surface Activity Data Sheet

Biased Measurement Location	Inst / RCT Nbr	Net Alpha (dpm/100cm²)	Net Beta (dpm/100cm²)	
974002PBP-N016	4	1.5	N/A	
974002PBP-N017	3	1.5	N/A	
974002PBP-N018	4	1.5	N/A	
974002PBP-N019	3	3.0	N/A	
974002PBP-N020	4	4.5	N/A	
974002PBP-N021	3	4.5	N/A	
974002PBP-N022	4	4.5	N/A	
974002PBP-N023	3	1.5	N/A	
974002PBP-N024	4	1.5	N/A	
974002PBP-N025	3	3.0	N/A	
974002PBP-N026	4	3.0	N/A	
974002PBP-N027	3	1.5	N/A	
974002PBP-N028	4	3.0	N/A	
974002PBP-N029	3	3.0	N/A	
974002PBP-N030	4	1.5	N/A	

Comments:

Survey Area: 5 | **Survey Unit:** 974002 | **Building:** T974A

Description: Building T974A Interior and Exterior

Random/QC Total Surface Activity Data Sheet

Random Measurement Location	Inst / RCT Nbr	Net Alpha (dpm/100cm²)	Net Beta (dpm/100cm²)	
974002PRP-N001	1	0.9	N/A	
974002PRP-N002	1	21.9	N/A	
974002QRP-N002	2	16.1	N/A	
974002PRP-N003	1	11.2	N/A	
974002PRP-N004	1	14.3	N/A	
974002PRP-N005	1	18.8	N/A	
974002PRP-N006	1	8.5	N/A	
974002PRP-N007	1	2.3	N/A	
974002PRP-N008	1	18.8	N/A	
974002QRP-N008	2	23.4	N/A	
974002PRP-N009	1	11.2	N/A	
974002PRP-N010	1	20.1	N/A	
974002PRP-N011	1	4.0	N/A	
974002PRP-N012	1	6.7	N/A	
974002PRP-N013	1	18.8	N/A	
974002PRP-N014	1	14.3	N/A	
974002PRP-N015	1	5.4	N/A	

Survey Area: 5	Survey Unit: 974002	Building: T974A

Description: Building T974A Interior and Exterior

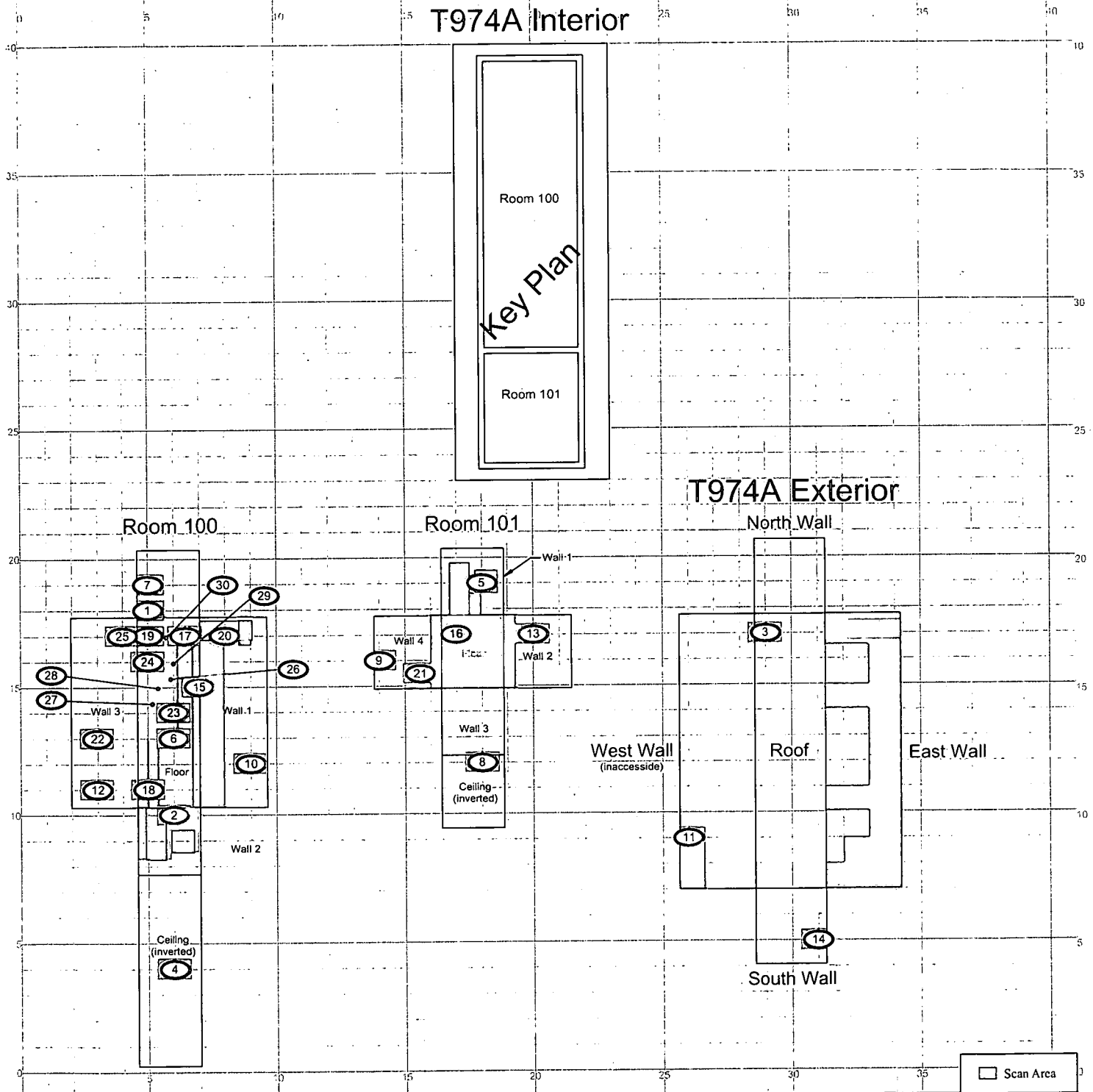
Biased Total Surface Activity Data Sheet

Biased Measurement Location	Inst / RCT Nbr	Net Alpha (dpm/100cm²)	Net Beta (dpm/100cm²)	
974002PBP-N016	1	15.7	N/A	
974002PBP-N017	2	22.3	N/A	
974002PBP-N018	2	-3.2	N/A	
974002PBP-N019	2	1.4	N/A	
974002PBP-N020	2	4.1	N/A	
974002PBP-N021	1	8.1	N/A	
974002PBP-N022	1	11.3	N/A	
974002PBP-N023	1	17.1	N/A	
974002PBP-N024	1	15.7	N/A	
974002PBP-N025	1	8.1	N/A	
974002PBP-N026	1	9.9	N/A	
974002PBP-N027	2	13.2	N/A	
974002PBP-N028	2	10.5	N/A	
974002PBP-N029	2	11.8	N/A	
974002PBP-N030	2	7.3	N/A	

Comments:

RLC/PDS FOR THE SEWAGE TREATMENT PLANT

Survey Area: 5 Survey Unit: 974002 Classification: 3
Building: T974A
Survey Unit Description: T974A Interior & Exterior
Total Area: 204 sq. m. Total Floor Area: 25 sq. m.



SURVEY MAP LEGEND

- Smear & TSA Location
- Smear, TSA & Sample Location
- Open/Inaccessible Area
- Area in Another Survey Unit

N

0 FEET 25
0 METERS 8

1 inch = 18 feet 1 grid sq. = 1 sq. m.

Scan Survey Information
Survey Instrument ID #(s) & RCT ID #(s):
1, 2

U.S. Department of Energy
Rocky Flats Environmental Technology Site

Prepared by: GIS Dept. 303-966-7707 Prepared for:

CH2MHILL Communications Group

KAISER-HILL COMPANY

MAP ID: 03-0221/T974A-INT-SC Aug. 19, 2003

Survey Area: 5	Survey Unit: 974001	Building: 974
Description: Building 974 (Interior and Exterior)		

Rocky Flats Environmental Technology Site
Final Radiological Survey Summary Results

Total Surface Activity Measurements

Nbr Random Measurements Required: 15 | Nbr Biased Measurements Required: 0 | Nbr QC Required: 2

Nbr Random Measurements Performed: 15 | Nbr Biased Measurements Performed: 15 | Nbr QC Performed: 2

Alpha

Maximum:	53.8 dpm/100cm²
Minimum:	-6.1 dpm/100cm²
Mean:	21.4 dpm/100cm²
Standard Deviation:	14.9
QC Maximum:	61.6 dpm/100cm²
QC Minimum:	32.0 dpm/100cm²
QC Mean:	46.8 dpm/100cm²
Transuranic $DCGL_W$:	100.0 dpm/100cm²
Transuranic $DCGL_{EMC}$:	300.0 dpm/100cm²

Removable Surface Activity Measurements

Nbr Random Measurements Required: 15 | Nbr Biased Measurements Required: 0

Nbr Random Measurements Performed: 15 | Nbr Biased Measurements Performed: 15

Alpha

Maximum:	4.2 dpm/100cm²
Minimum:	-0.6 dpm/100cm²
Mean:	0.0 dpm/100cm²
Standard Deviation:	1.1
Transuranic $DCGL_W$:	20.0 dpm/100cm²

Media Sample Results

Nbr Random Required: 0 | Nbr Biased Required: 0

Nbr Random Collected: 0 | Nbr Biased Collected: 0

Conclusion - A comparison of the random, biased and QC measurement results against the PDSP Table 7-1 Surface Contamination Guideline limits was conducted; the comparison demonstrates that this survey unit passes the criterion specified in the PDSP.

40

Survey Area: 5	Survey Unit: 974001	Building: 974
Description: Building 974 (Interior and Exterior)		

Instrument Data Sheet

Inst/RCT Number	RCT ID	Analysis Date	Instr Model	Instru S/N	Probe Type	Calibration Due Dt	Instru Efficiency		A-Priori MDA (dpm/100cm²)		Survey Type
							Alpha	Beta	Alpha	Beta	
1	700831	12/02/04	Electra	2340	DP-6	05/15/05	0.226	NA	48.0	NA	T/Q/S
2	711447	12/02/04	Electra	1235	DP-6	03/16/05	0.218	NA	48.0	NA	T/Q/S
3	711447	12/02/04	Electra	666	DP-8	03/08/05	0.146	NA	48.0	NA	S
4	511390	12/06/04	SAC-4	924	NA	02/04/05	0.330	NA	10.0	NA	R
5	511390	12/06/04	SAC-4	952	NA	02/12/05	0.330	NA	10.0	NA	R
6	700831	12/06/04	Electra	2340	DP-6	05/15/05	0.226	NA	48.0	NA	T/S

Survey Types: T = Total Surface Activity, Q = TSA QC, S = Scan, R = Removable Surface Activity, I = Investigation

Survey Area: 5	Survey Unit: 974001	Building: 974
Description: Building 974 (Interior and Exterior)		

Random Removable Surface Activity Data Sheet

Random Measurement Location	Inst / RCT Nbr	Net Alpha (dpm/100cm²)	Net Beta (dpm/100cm²)	
974001PRP-N001	4	1.2	N/A	
974001PRP-N002	5	-0.6	N/A	
974001PRP-N003	4	-0.3	N/A	
974001PRP-N004	5	-0.6	N/A	
974001PRP-N005	4	-0.3	N/A	
974001PRP-N006	5	-0.6	N/A	
974001PRP-N007	4	4.2	N/A	
974001PRP-N008	5	-0.6	N/A	
974001PRP-N009	5	-0.6	N/A	
974001PRP-N010	4	-0.3	N/A	
974001PRP-N011	5	-0.6	N/A	
974001PRP-N012	4	-0.3	N/A	
974001PRP-N013	5	-0.6	N/A	
974001PRP-N014	5	2.4	N/A	
974001PRP-N015	4	-0.3	N/A	

B2

Survey Area: 5	Survey Unit: 974001	Building: 974
Description: Building 974 (Interior and Exterior)		

Biased Removable Surface Activity Data Sheet

Biased Measurement Location	Inst / RCT Nbr	Net Alpha (dpm/100cm²)	Net Beta (dpm/100cm²)	
974001PBP-N016	4	-0.3	N/A	
974001PBP-N017	5	-0.6	N/A	
974001PBP-N018	4	-0.3	N/A	
974001PBP-N019	5	-0.6	N/A	
974001PBP-N020	4	-0.3	N/A	
974001PBP-N021	5	2.4	N/A	
974001PBP-N022	4	-0.3	N/A	
974001PBP-N023	5	-0.6	N/A	
974001PBP-N024	4	-0.3	N/A	
974001PBP-N025	5	-0.6	N/A	
974001PBP-N026	4	-0.3	N/A	
974001PBP-N027	4	-0.3	N/A	
974001PBP-N028	5	-0.6	N/A	
974001PBP-N029	4	-0.3	N/A	
974001PBP-N030	4	-0.3	N/A	

Comments:

Survey Area: 5	Survey Unit: 974001	Building: 974
Description: Building 974 (Interior and Exterior)		

Random/QC Total Surface Activity Data Sheet

Random Measurement Location	Inst / RCT Nbr	Net Alpha (dpm/100cm²)	Net Beta (dpm/100cm²)	
974001PRP-N001	1	29.3	N/A	
974001PRP-N002	1	17.4	N/A	
974001PRP-N003	1	9.9	N/A	
974001PRP-N004	1	13.0	N/A	
974001PRP-N005	1	-6.1	N/A	
974001PRP-N006	1	29.3	N/A	
974001QRP-N006	2	61.6	N/A	
974001PRP-N007	6	9.9	N/A	
974001PRP-N008	6	11.6	N/A	
974001PRP-N009	1	24.9	N/A	
974001PRP-N010	2	14.1	N/A	
974001PRP-N011	1	5.5	N/A	
974001QRP-N012	1	32.0	N/A	
974001PRP-N012	2	29.2	N/A	
974001PRP-N013	1	52.8	N/A	
974001PRP-N014	6	43.9	N/A	
974001PRP-N015	1	5.5	N/A	

Survey Area: 5	Survey Unit: 974001	Building: 974

Description: Building 974 (Interior and Exterior)

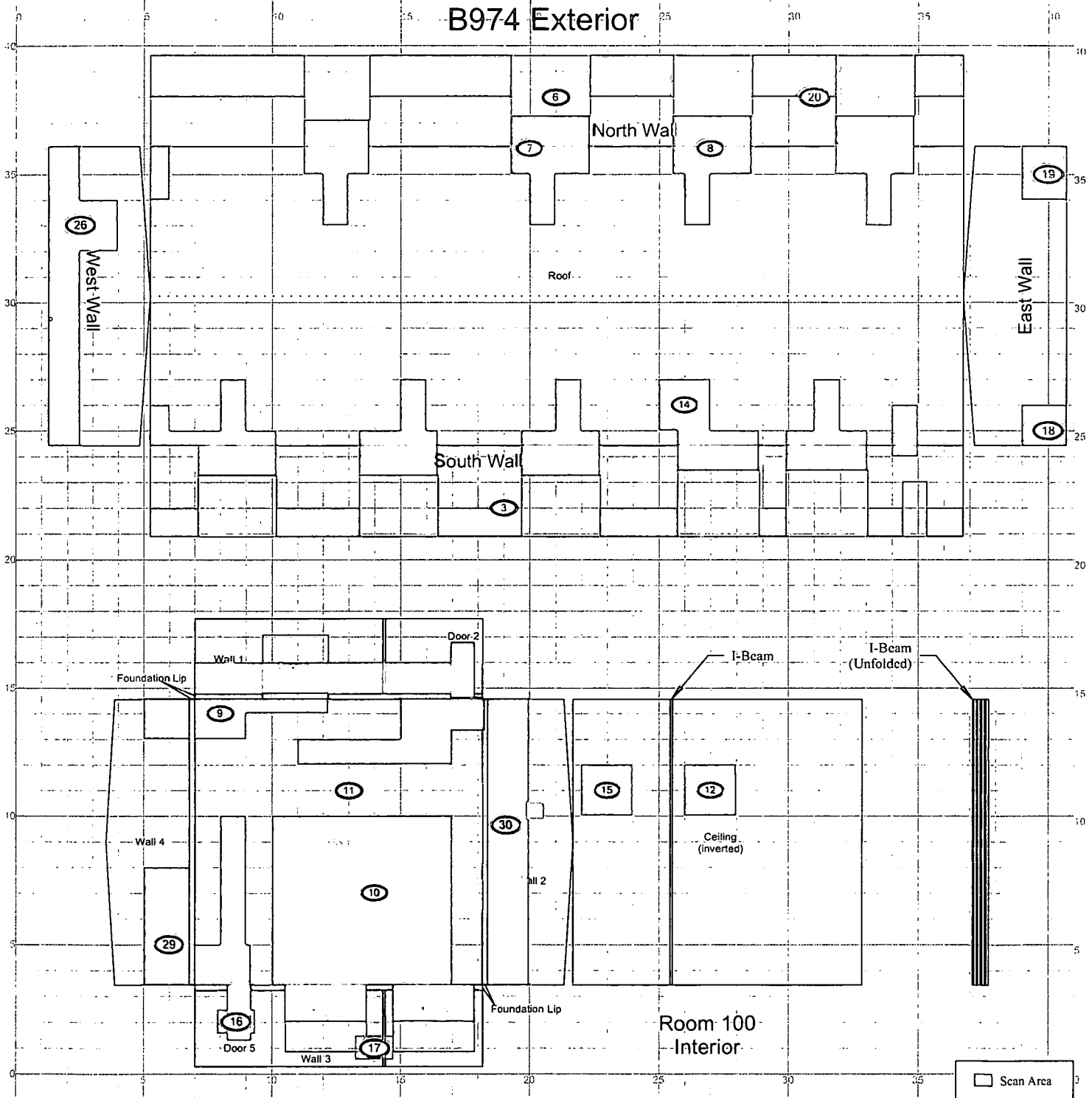
Biased Total Surface Activity Data Sheet

Biased Measurement Location	Inst / RCT Nbr	Net Alpha (dpm/100cm²)	Net Beta (dpm/100cm²)	
974001PBP-N016	1	43.9	N/A	
974001PBP-N017	1	30.6	N/A	
974001PBP-N018	1	4.1	N/A	
974001PBP-N019	1	16.0	N/A	
974001PBP-N020	1	29.3	N/A	
974001PBP-N021	1	33.7	N/A	
974001PBP-N022	1	12.9	N/A	
974001PBP-N023	1	11.6	N/A	
974001PBP-N024	1	4.1	N/A	
974001PBP-N025	1	24.9	N/A	
974001PBP-N026	1	32.0	N/A	
974001PBP-N027	1	18.7	N/A	
974001PBP-N028	1	8.5	N/A	
974001PBP-N029	2	26.3	N/A	
974001PBP-N030	2	53.8	N/A	

Comments:

RLC/PDS FOR THE SEWAGE TREATMENT PLANT

Survey Area: 5 **Survey Unit: 974001** **Classification: 3**
Building: 974
Survey Unit Description: Building 974 (Interior & Exterior)
Total Area: 1,774 sq. m. **Total Floor Area: 361 sq. m.**



SURVEY MAP LEGEND

- Smear & TSA Location
- Smear, TSA & Sample Location
- Open/Inaccessible Area
- Area in Another Survey Unit

N

0 FEET 25
0 METERS 8

1 inch = 18 feet 1 grid sq. = 1 sq. m.

Scan Survey Information
Survey Instrument ID #(s) & RCT ID #(s):
1, 2, 3 & 6

U.S. Department of Energy
Rocky Flats Environmental Technology Site

Prepared by: GIS Dept. 303-966-7707

CH2MHILL Communications Group

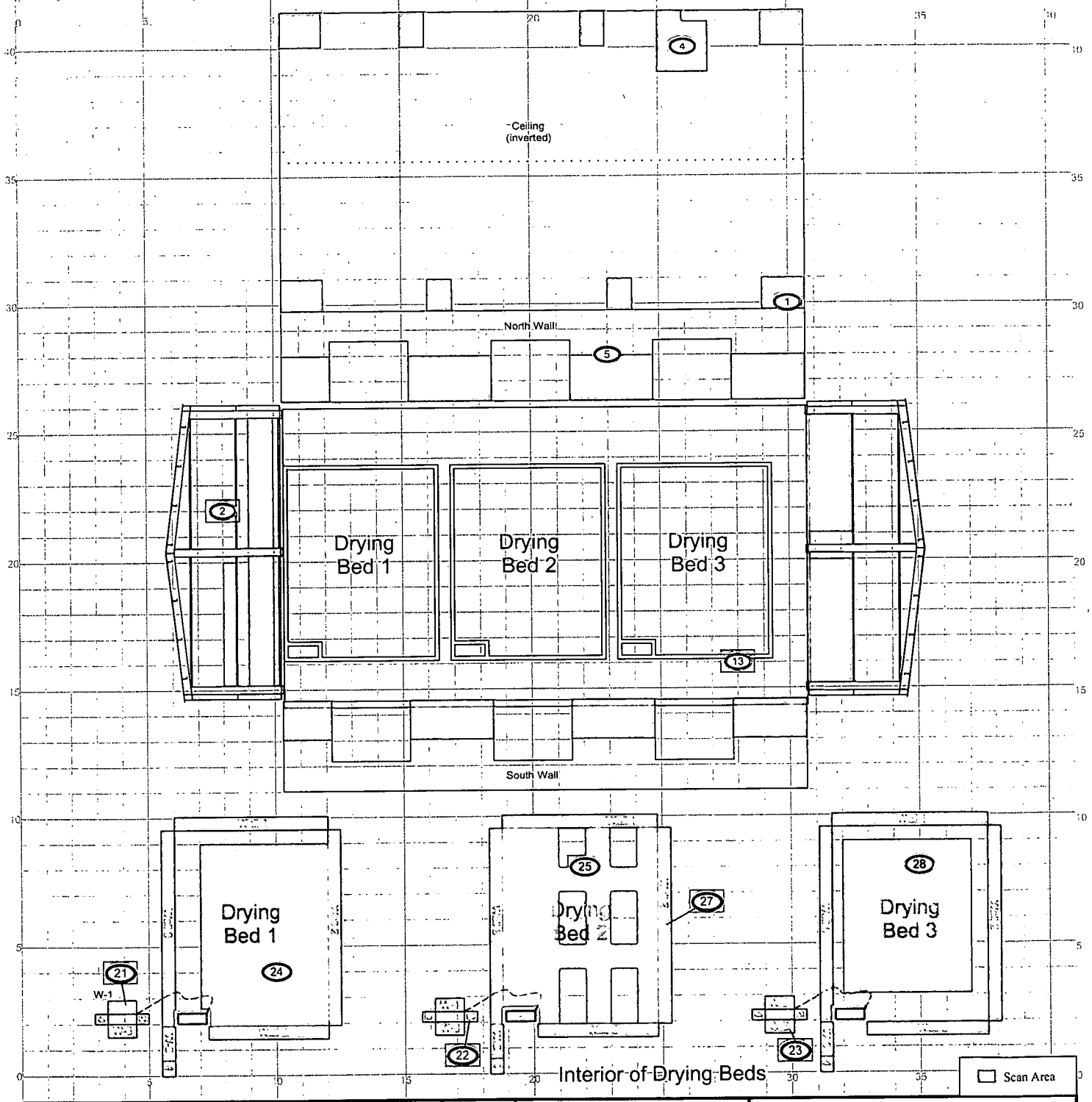
KAISER-HILL COMPANY

MAP ID: 03-0226\974-Ex_SC Dec. 7, 2004

416

RLC/PDS FOR THE SEWAGE TREATMENT PLANT

Survey Area: 5 **Survey Unit: 974001** **Classification: 3**
Building: 974
Survey Unit Description: Building 974 (Interior & Exterior)
Total Area: 1774 sq. m. **Total Floor Area: 361 sq. m.**



SURVEY MAP LEGEND

- Smear & TSA Location
- Smear, TSA & Sample Location
- Open/Inaccessible Area
- Area in Another Survey Unit

N

0 FEET 25
0 METERS 8

1 inch = 18 feet 1 grid sq. = 1 sq. m.

Scan Survey Information
Survey Instrument ID #(s) & RCT ID #(s):
1, 2, 3 & 6

U.S. Department of Energy
Rocky Flats Environmental Technology Site

Prepared by: GIS Dept. 303-966-7707

CH2MHILL Communications Group

KAISER-HILL COMPANY

MAP ID: 03-0226\974 Pg2_SC Dec. 7, 2004

4M

Survey Area: 5	Survey Unit: 977002	Building: 977
Description: Building 977 (Interior and Exterior)		

Rocky Flats Environmental Technology Site
Final Radiological Survey Summary Results

Total Surface Activity Measurements

Nbr Random Measurements Required: 15 | Nbr Biased Measurements Required: 0 | Nbr QC Required: 2

Nbr Random Measurements Performed: 15 | Nbr Biased Measurements Performed: 15 | Nbr QC Performed: 2

Alpha

Maximum:	65.1 dpm/100cm²
Minimum:	13.2 dpm/100cm²
Mean:	28.7 dpm/100cm²
Standard Deviation:	12.6
QC Maximum:	61.2 dpm/100cm²
QC Minimum:	24.5 dpm/100cm²
QC Mean:	42.9 dpm/100cm²
Transuranic DCGL$_W$:	100.0 dpm/100cm²
Transuranic DCGL$_{EMC}$:	300.0 dpm/100cm²

Removable Surface Activity Measurements

Nbr Random Measurements Required: 15 | Nbr Biased Measurements Required: 0

Nbr Random Measurements Performed: 15 | Nbr Biased Measurements Performed: 15

Alpha

Maximum:	2.7 dpm/100cm²
Minimum:	-0.6 dpm/100cm²
Mean:	0.4 dpm/100cm²
Standard Deviation:	1.1
Transuranic DCGL$_W$:	20.0 dpm/100cm²

Media Sample Results

Nbr Random Required: 0 | Nbr Biased Required: 0

Nbr Random Collected: 0 | Nbr Biased Collected: 0

Conclusion - A comparison of the random, biased and QC measurement results against the PDSP Table 7-1 Surface Contamination Guideline limits was conducted; the comparison demonstrates that this survey unit passes the criterion specified in the PDSP.

Survey Area: 5	Survey Unit: 977002	Building: 977
Description: Building 977 (Interior and Exterior)		

Instrument Data Sheet

Inst/RCT Number	RCT ID	Analysis Date	Instr Model	Instru S/N	Probe Type	Calibration Due Dt	Instru Efficiency		A-Priori MDA (dpm/100cm²)		Survey Type
							Alpha	Beta	Alpha	Beta	
1	700831	12/02/04	Electra	1235	DP-6	03/16/05	0.218	NA	48.0	NA	T/S
2	711447	12/02/04	Electra	666	DP-8	03/08/05	0.146	NA	48.0	NA	S
3	711447	12/02/04	Electra	662	DP-6	03/30/05	0.218	NA	48.0	NA	Q/S
4	511390	12/02/04	SAC-4	924	NA	02/04/05	0.330	NA	10.0	NA	R
5	511390	12/02/04	SAC-4	952	NA	02/12/05	0.330	NA	10.0	NA	R

Survey Types: T = Total Surface Activity, Q = TSA QC, S = Scan, R = Removable Surface Activity, I = Investigation

Survey Area: 5	Survey Unit: 977002	Building: 977

Description: Building 977 (Interior and Exterior)

Random Removable Surface Activity Data Sheet

Random Measurement Location	Inst / RCT Nbr	Net Alpha (dpm/100cm²)	Net Beta (dpm/100cm²)	
977002PRP-N001	4	0.9	N/A	
977002PRP-N002	5	2.7	N/A	
977002PRP-N003	4	-0.6	N/A	
977002PRP-N004	5	-0.3	N/A	
977002PRP-N005	4	-0.6	N/A	
977002PRP-N006	5	-0.3	N/A	
977002PRP-N007	4	-0.6	N/A	
977002PRP-N008	5	-0.3	N/A	
977002PRP-N009	4	0.9	N/A	
977002PRP-N010	5	1.2	N/A	
977002PRP-N011	4	-0.6	N/A	
977002PRP-N012	5	-0.3	N/A	
977002PRP-N013	4	0.9	N/A	
977002PRP-N014	5	-0.3	N/A	
977002PRP-N015	4	-0.6	N/A	

Survey Area: 5	Survey Unit: 977002	Building: 977

Description: Building 977 (Interior and Exterior)

Biased Removable Surface Activity Data Sheet

Biased Measurement Location	Inst / RCT Nbr	Net Alpha (dpm/100cm²)	Net Beta (dpm/100cm²)	
977002PBP-N016	5	1.2	N/A	
977002PBP-N017	4	2.4	N/A	
977002PBP-N018	5	1.2	N/A	
977002PBP-N019	4	0.9	N/A	
977002PBP-N020	5	1.2	N/A	
977002PBP-N021	4	-0.6	N/A	
977002PBP-N022	5	2.7	N/A	
977002PBP-N023	4	-0.6	N/A	
977002PBP-N024	5	-0.3	N/A	
977002PBP-N025	4	-0.6	N/A	
977002PBP-N026	5	1.2	N/A	
977002PBP-N027	4	-0.6	N/A	
977002PBP-N028	5	1.2	N/A	
977002PBP-N029	4	-0.6	N/A	
977002PBP-N030	5	-0.3	N/A	

Comments:

Survey Area: 5	Survey Unit: 977002	Building: 977
Description: Building 977 (Interior and Exterior)		

Random/QC Total Surface Activity Data Sheet

Random Measurement Location	Inst / RCT Nbr	Net Alpha (dpm/100cm²)	Net Beta (dpm/100cm²)	
977002PRP-N001	1	24.0	N/A	
977002PRP-N002	1	24.0	N/A	
977002PRP-N003	1	24.0	N/A	
977002PRP-N004	1	14.8	N/A	
977002PRP-N005	1	14.8	N/A	
977002PRP-N006	1	57.5	N/A	
977002QRP-N006	3	24.5	N/A	
977002PRP-N007	1	37.7	N/A	
977002QRP-N007	3	61.2	N/A	
977002PRP-N008	1	14.8	N/A	
977002PRP-N009	1	22.6	N/A	
977002PRP-N010	1	36.4	N/A	
977002PRP-N011	1	24.0	N/A	
977002PRP-N012	1	22.6	N/A	
977002PRP-N013	1	14.8	N/A	
977002PRP-N014	1	33.1	N/A	
977002PRP-N015	1	29.9	N/A	

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Survey Area: 5	Survey Unit: 977002	Building: 977
Description: Building 977 (Interior and Exterior)		

Biased Total Surface Activity Data Sheet

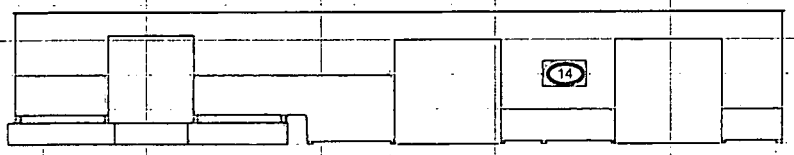
Biased Measurement Location	Inst / RCT Nbr	Net Alpha (dpm/100cm²)	Net Beta (dpm/100cm²)	
977002PBP-N016	1	65.1	N/A	
977002PBP-N017	1	36.2	N/A	
977002PBP-N018	1	27.0	N/A	
977002PBP-N019	1	14.6	N/A	
977002PBP-N020	1	13.2	N/A	
977002PBP-N021	1	31.6	N/A	
977002PBP-N022	1	29.7	N/A	
977002PBP-N023	1	37.5	N/A	
977002PBP-N024	1	17.8	N/A	
977002PBP-N025	1	38.9	N/A	
977002PBP-N026	1	40.7	N/A	
977002PBP-N027	1	29.7	N/A	
977002PBP-N028	1	42.1	N/A	
977002PBP-N029	1	14.6	N/A	
977002PBP-N030	1	28.4	N/A	

Comments:

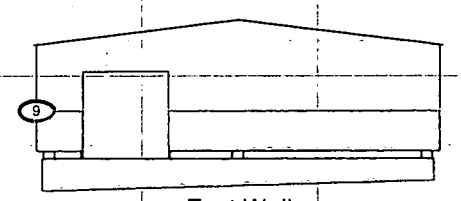
RLC/PDS FOR THE SEWAGE TREATMENT PLANT

Survey Area: 5 **Survey Unit: 977002** **Classification: 3**
Building: 977
Survey Unit Description: Building 977 Interior & Exterior
Total Area: 1045 sq. m. **Total Floor Area: 251 sq. m.**
Total Roof Area: 257 sq. m.

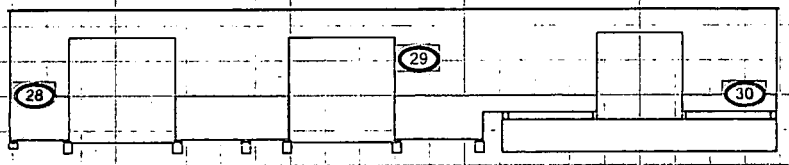
B977 Exterior Elevations



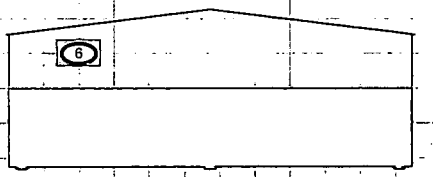
North Wall



East Wall

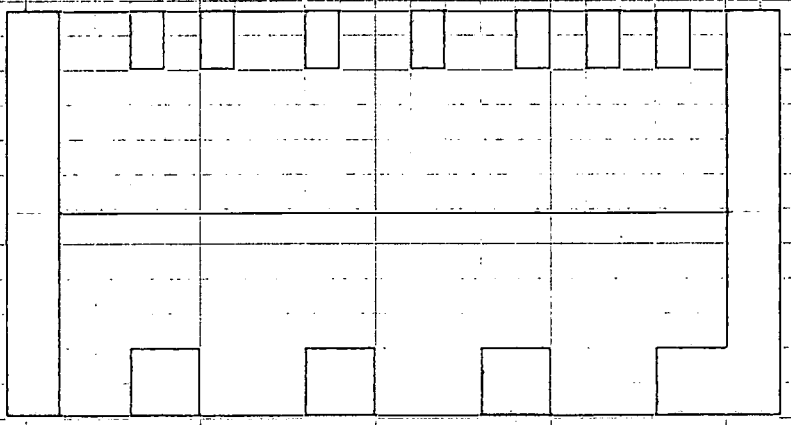


South Wall



West Wall

B977 Roof Exterior



Scan Area

SURVEY MAP LEGEND

- Smear & TSA Location
- Smear, TSA & Sample Location
- Open/Inaccessible Area
- Area in Another Survey Unit

N

0 FEET 25

0 METERS 8

1 inch = 18 feet 1 grid sq. = 1 sq. m.

Scan Survey Information
Survey Instrument ID #(s) & RCT ID #(s):
1, 2, 3

U.S. Department of Energy
Rocky Flats Environmental Technology Site

Prepared by: GIS Dept. 303-966-7707

CH2MHILL Communications Group

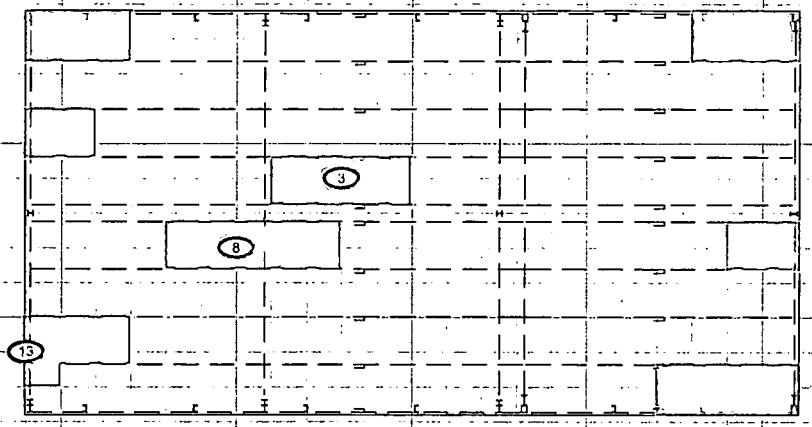
KAISER-HILL COMPANY

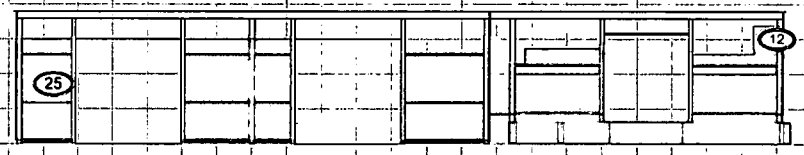
MAP ID: 03-0226/977-EXT-1_SC Dec. 7, 2004

RLC/PDS FOR THE SEWAGE TREATMENT PLANT

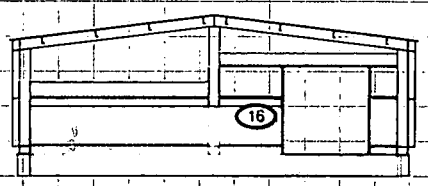
Survey Area: 5 **Survey Unit: 977002** **Classification: 3**
Building: 977
Survey Unit Description: Building 977 Interior & Exterior
Total Area: 1045 sq. m. **Total Floor Area: 251 sq. m.**
Total Roof Area: 257 sq. m.

B977 Roof Interior

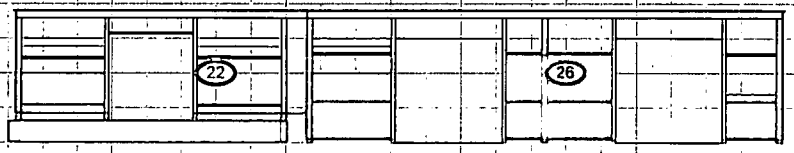




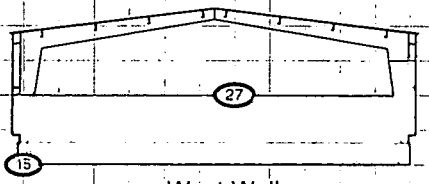
North Wall



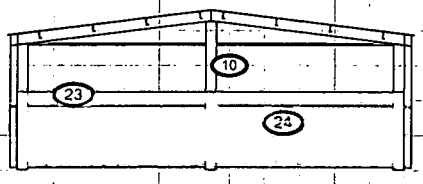
East Wall



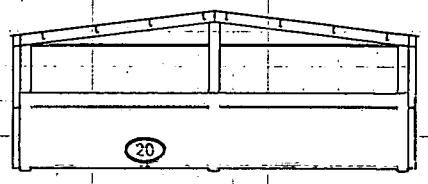
South Wall



West Wall



West Wall



East Wall

Scan Area

SURVEY MAP LEGEND

- Smear & TSA Location
- Smear, TSA & Sample Location
- Open/Inaccessible Area
- Area in Another Survey Unit

N

0 FEET 25

0 METERS 8

1 inch = 18 feet 1 grid sq. = 1 sq. m.

Scan Survey Information
Survey Instrument ID #(s) & RCT ID #(s):
1, 2, 3

U.S. Department of Energy
Rocky Flats Environmental Technology Site

Prepared by: GIS Dept. 303-966-7707

CH2MHILL Communications Group

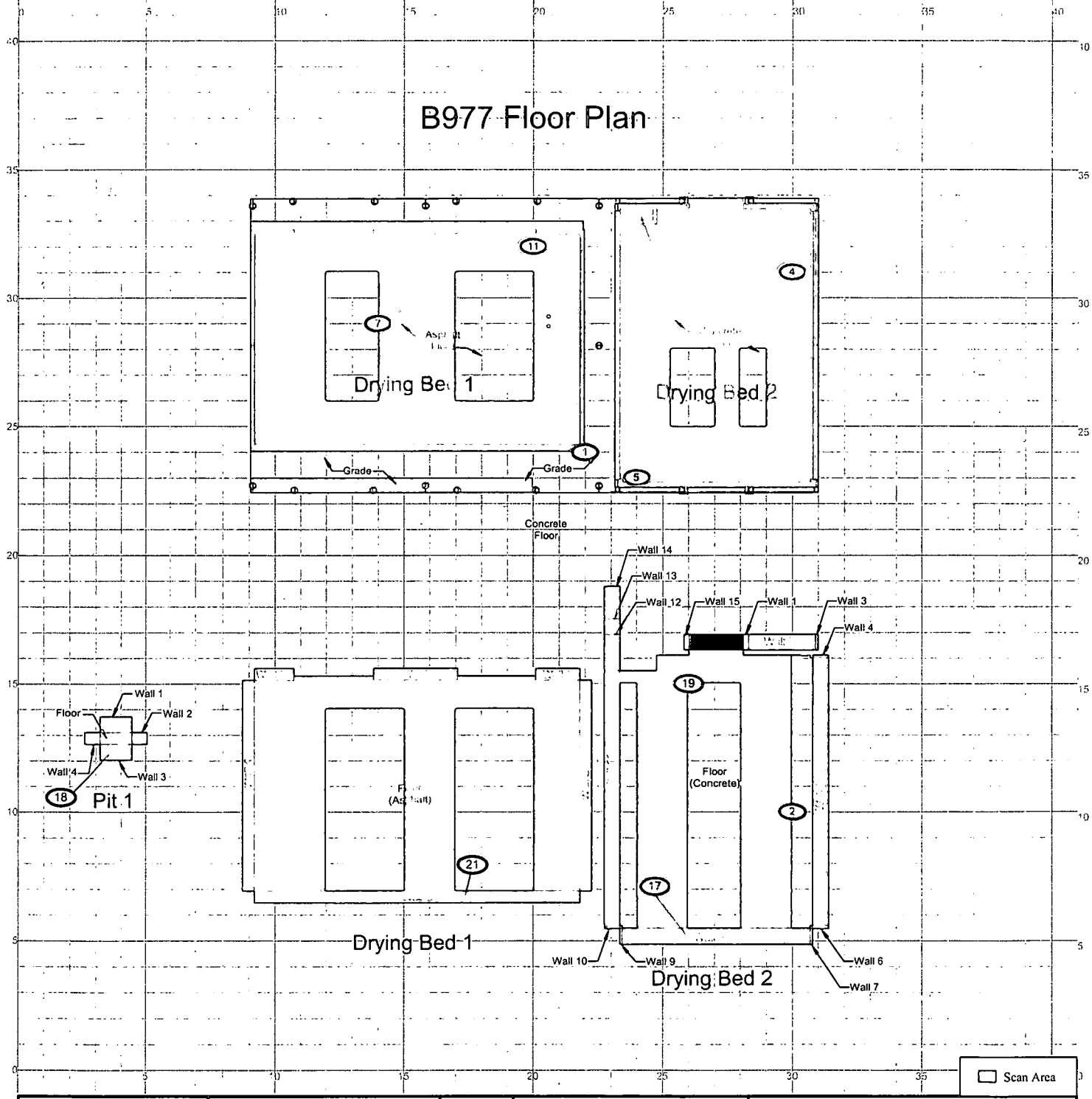
KAISER-HILL COMPANY

MAP ID: 03-0226/977-INT-2_SC Dec. 7, 2004

RLC/PDS FOR THE SEWAGE TREATMENT PLANT

Survey Area: 5 **Survey Unit: 977002** **Classification: 3**
Building: 977
Survey Unit Description: Building 977 Interior & Exterior
Total Area: 1045 sq. m. **Total Floor Area: 251 sq. m.**
Total Roof Area: 257 sq. m.

B977 Floor Plan



SURVEY MAP LEGEND

- Smear & TSA Location
- Smear, TSA & Sample Location
- Open/Inaccessible Area
- Area in Another Survey Unit

N

0 FEET 25
0 METERS 8

1 inch = 18 feet 1 grid sq. = 1 sq. m.

Scan Survey Information
Survey Instrument ID #(s) & RCT ID #(s):
1, 2, 3

U.S. Department of Energy
Rocky Flats Environmental Technology Site

Prepared by: GIS Dept. 303-966-7707

CH2MHILL Communications Group

KAISER-HILL COMPANY

MAP ID: 03-0226/977-INT-3_SC Dec. 8, 2004

56

Survey Area: 5	Survey Unit: 988003	Building: 988
Description: Building 988 Interior and Exterior		

Rocky Flats Environmental Technology Site
Final Radiological Survey Summary Results

Total Surface Activity Measurements

Nbr Random Measurements Required: 15 | Nbr Biased Measurements Required: 0 | Nbr QC Required: 2

Nbr Random Measurements Performed: 15 | Nbr Biased Measurements Performed: 15 | Nbr QC Performed: 2

Alpha

Maximum:	67.9 dpm/100cm²
Minimum:	-12.4 dpm/100cm²
Mean:	21.1 dpm/100cm²
Standard Deviation:	20.4
QC Maximum:	44.8 dpm/100cm²
QC Minimum:	38.2 dpm/100cm²
QC Mean:	41.5 dpm/100cm²
Transuranic DCGL$_W$:	100.0 dpm/100cm²
Transuranic DCGL$_{EMC}$:	300.0 dpm/100cm²

Removable Surface Activity Measurements

Nbr Random Measurements Required: 15 | Nbr Biased Measurements Required: 0

Nbr Random Measurements Performed: 15 | Nbr Biased Measurements Performed: 15

Alpha

Maximum:	4.5 dpm/100cm²
Minimum:	0.0 dpm/100cm²
Mean:	1.8 dpm/100cm²
Standard Deviation:	1.3
Transuranic DCGL$_W$:	20.0 dpm/100cm²

Media Sample Results

Nbr Random Required: 0 | Nbr Biased Required: 0

Nbr Random Collected: 0 | Nbr Biased Collected: 0

Conclusion - A comparison of the random, biased and QC measurement results against the PDSP Table 7-1 Surface Contamination Guideline limits was conducted; the comparison demonstrates that this survey unit passes the criterion specified in the PDSP.

57

Survey Area: 5	Survey Unit: 988003	Building: 988

Description: Building 988 Interior and Exterior

Instrument Data Sheet

Inst/RCT Number	RCT ID	Analysis Date	Instr Model	Instru S/N	Probe Type	Calibration Due Dt	Instru Efficiency		A-Priori MDA (dpm/100cm²)		Survey Type
							Alpha	Beta	Alpha	Beta	
1	700831	11/23/04	Electra	1415	DP-6	04/21/05	0.224	NA	48.0	NA	T/S
2	712467	11/23/04	Electra	1665	DP-6	04/07/05	0.213	NA	48.0	NA	T/S
3	712193	11/23/04	Electra	657	AP-6	12/14/04	0.188	NA	92.0	NA	S
4	711447	11/23/04	Electra	1665	DP-6	04/07/05	0.213	NA	48.0	NA	Q/S
5	700831	11/24/04	Electra	3109	DP-6	12/14/04	0.220	NA	48.0	NA	T/S
6	712467	11/24/04	SAC-4	924	NA	02/04/05	0.330	NA	10.0	NA	R

Survey Types: T = Total Surface Activity, Q = TSA QC, S = Scan, R = Removable Surface Activity, I = Investigation

Survey Area: 5	Survey Unit: 988003	Building: 988
Description: Building 988 Interior and Exterior		

Random Removable Surface Activity Data Sheet

Random Measurement Location	Inst / RCT Nbr	Net Alpha (dpm/100cm²)	Net Beta (dpm/100cm²)	
988003PRP-N001	6	0.0	N/A	
988003PRP-N002	6	0.0	N/A	
988003PRP-N003	6	0.0	N/A	
988003PRP-N004	6	3.0	N/A	
988003PRP-N005	6	1.5	N/A	
988003PRP-N006	6	1.5	N/A	
988003PRP-N007	6	4.5	N/A	
988003PRP-N008	6	3.0	N/A	
988003PRP-N009	6	1.5	N/A	
988003PRP-N010	6	3.0	N/A	
988003PRP-N011	6	1.5	N/A	
988003PRP-N012	6	1.5	N/A	
988003PRP-N013	6	0.0	N/A	
988003PRP-N014	6	1.5	N/A	
988003PRP-N015	6	1.5	N/A	

Survey Area: 5	Survey Unit: 988003	Building: 988
Description: Building 988 Interior and Exterior		

Biased Removable Surface Activity Data Sheet

Biased Measurement Location	Inst / RCT Nbr	Net Alpha (dpm/100cm²)	Net Beta (dpm/100cm²)	
988003PBP-N016	6	1.5	N/A	
988003PBP-N017	6	3.0	N/A	
988003PBP-N018	6	1.5	N/A	
988003PBP-N019	6	4.5	N/A	
988003PBP-N020	6	1.5	N/A	
988003PBP-N021	6	3.0	N/A	
988003PBP-N022	6	1.5	N/A	
988003PBP-N023	6	1.5	N/A	
988003PBP-N024	6	1.5	N/A	
988003PBP-N025	6	3.0	N/A	
988003PBP-N026	6	0.0	N/A	
988003PBP-N027	6	1.5	N/A	
988003PBP-N028	6	0.0	N/A	
988003PBP-N029	6	3.0	N/A	
988003PBP-N030	6	1.5	N/A	

Comments:

Survey Area: 5 **Survey Unit:** 988003 **Building:** 988

Description: Building 988 Interior and Exterior

Random/QC Total Surface Activity Data Sheet

Random Measurement Location	Inst / RCT Nbr	Net Alpha (dpm/100cm²)	Net Beta (dpm/100cm²)	
988003PRP-N001	1	57.8	N/A	
988003QRP-N001	4	38.2	N/A	
988003PRP-N002	2	24.3	N/A	
988003PRP-N003	1	6.0	N/A	
988003PRP-N004	2	29.0	N/A	
988003PRP-N005	1	26.6	N/A	
988003PRP-N006	2	18.2	N/A	
988003PRP-N007	5	2.0	N/A	
988003PRP-N008	1	13.2	N/A	
988003PRP-N009	2	2.7	N/A	
988003PRP-N010	1	10.5	N/A	
988003PRP-N011	2	5.5	N/A	
988003PRP-N012	1	57.8	N/A	
988003QRP-N012	4	44.8	N/A	
988003PRP-N013	2	8.8	N/A	
988003PRP-N014	1	16.3	N/A	
988003PRP-N015	2	30.8	N/A	

Survey Area: 5	Survey Unit: 988003	Building: 988

Description: Building 988 Interior and Exterior

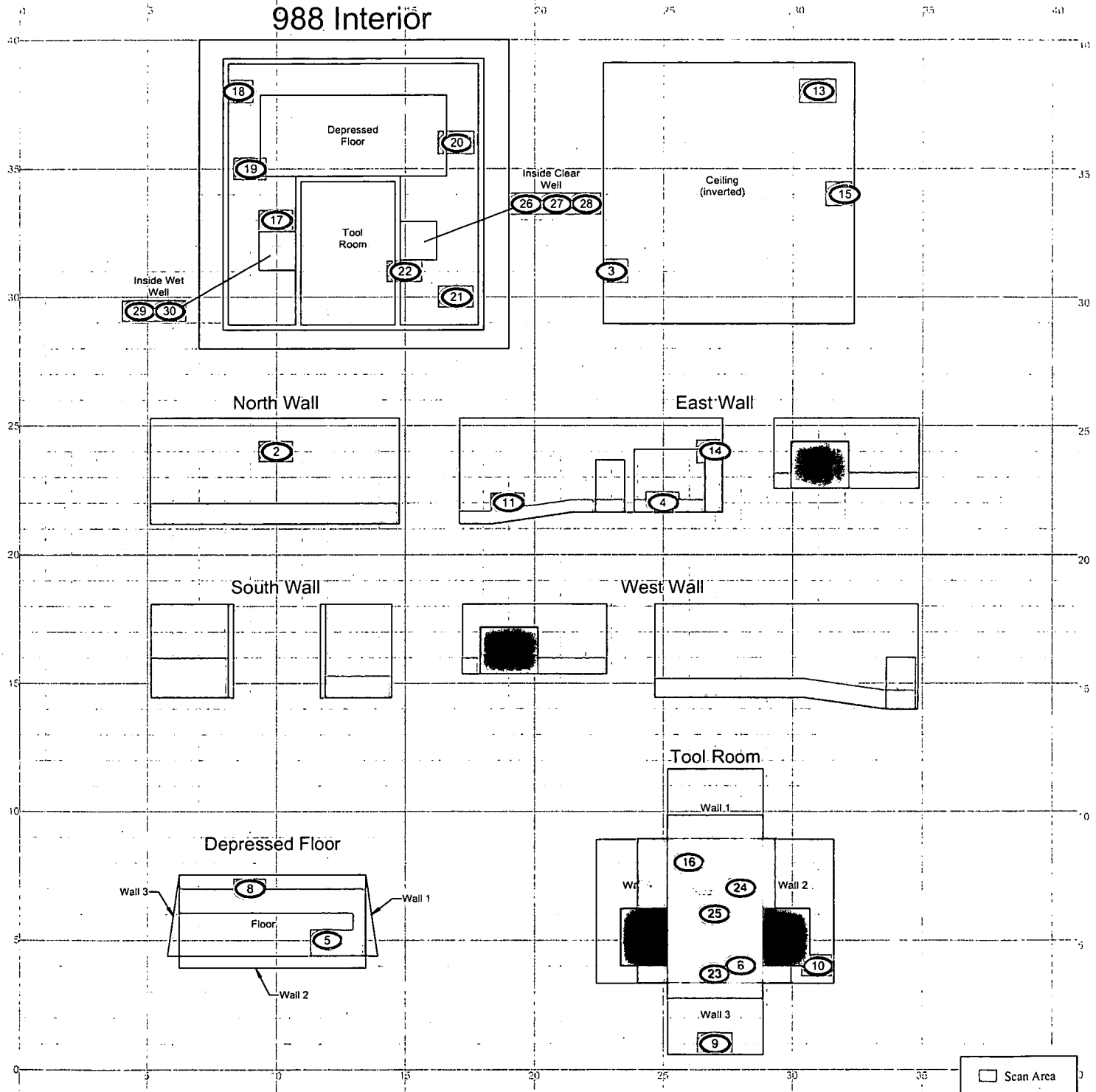
Biased Total Surface Activity Data Sheet

Biased Measurement Location	Inst / RCT Nbr	Net Alpha (dpm/100cm²)	Net Beta (dpm/100cm²)	
988003PBP-N016	1	8.6	N/A	
988003PBP-N017	2	19.5	N/A	
988003PBP-N018	1	32.3	N/A	
988003PBP-N019	2	22.4	N/A	
988003PBP-N020	1	-3.4	N/A	
988003PBP-N021	2	53.8	N/A	
988003PBP-N022	1	1.0	N/A	
988003PBP-N023	2	67.9	N/A	
988003PBP-N024	1	-12.4	N/A	
988003PBP-N025	2	-5.8	N/A	
988003PBP-N026	1	23.3	N/A	
988003PBP-N027	2	47.7	N/A	
988003PBP-N028	1	17.5	N/A	
988003PBP-N029	2	41.1	N/A	
988003PBP-N030	1	11.3	N/A	

Comments:

RLC/PDS FOR THE SEWAGE TREATMENT PLANT

Survey Area: 5 **Survey Unit: 988003** **Classification: 3**
Building: 988
Survey Unit Description: Building 988 Interior & Exterior
Total Area: 582 sq. m. **Total Floor Area: 98 sq. m.**



SURVEY MAP LEGEND

- Smear & TSA Location
- Smear, TSA & Sample Location
- Open/Inaccessible Area
- Area in Another Survey Unit

N

0 FEET 25
0 METERS 8

1 inch = 18 feet 1 grid sq. = 1 sq. m.

Scan Survey Information
Survey Instrument ID #(s) & RCT ID #(s):
1, 2, 3, 4, 5

U.S. Department of Energy
Rocky Flats Environmental Technology Site

Prepared by: GIS Dept. 303-966-7707 Prepared for:

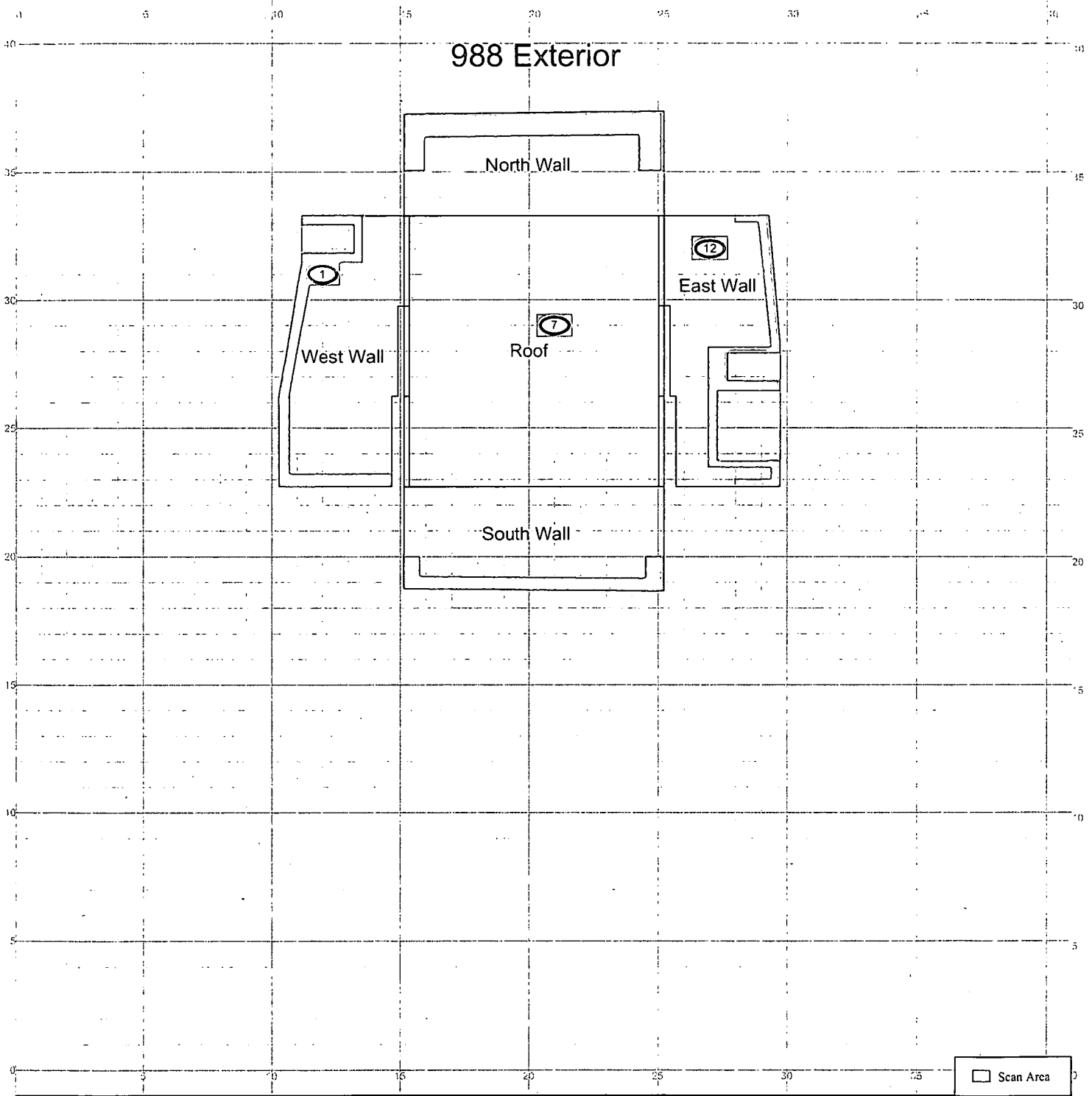
CH2MHILL Communications Group

KAISER-HILL COMPANY

MAP ID: 03-0221/988-INT-SC July 9, 2003

RLC/PDS FOR THE SEWAGE TREATMENT PLANT

Survey Area: 5 **Survey Unit: 988003** **Classification: 3**
Building: 988
Survey Unit Description: Building 988 Interior & Exterior
Total Area: 582 sq. m. **Total Floor Area: 98 sq. m.**



SURVEY MAP LEGEND

- Smear & TSA Location
- Smear, TSA & Sample Location
- Open/Inaccessible Area
- Area in Another Survey Unit

N

0 FEET 25

0 METERS 8

1 inch = 18 feet 1 grid sq. = 1 sq. m.

Scan Survey Information
Survey Instrument ID #(s) & RCT ID #(s):
1, 2, 3, 4, 5

U.S. Department of Energy
Rocky Flats Environmental Technology Site

Prepared by: GIS Dept. 303-966-7707 **Prepared for:**

CH2MHILL
Communications Group

KAISER HILL COMPANY

MAP ID: 03-0221/988-EXT-SC **July 9, 2003**

Survey Area: 5	Survey Unit: 988A01	Building: 988A
Description: Building 988A Interior and Exterior		

Rocky Flats Environmental Technology Site
Final Radiological Survey Summary Results

Total Surface Activity Measurements

Nbr Random Measurements Required: 15 | Nbr Biased Measurements Required: 0 | Nbr QC Required: 2

Nbr Random Measurements Performed: 15 | Nbr Biased Measurements Performed: 15 | Nbr QC Performed: 2

Alpha

Maximum:	48.5 dpm/100cm²
Minimum:	-13.3 dpm/100cm²
Mean:	15.9 dpm/100cm²
Standard Deviation:	15.3
QC Maximum:	38.0 dpm/100cm²
QC Minimum:	36.6 dpm/100cm²
QC Mean:	37.3 dpm/100cm²
Transuranic DCGL$_W$:	100.0 dpm/100cm²
Transuranic DCGL$_{EMC}$:	300.0 dpm/100cm²

Removable Surface Activity Measurements

Nbr Random Measurements Required: 15 | Nbr Biased Measurements Required: 0

Nbr Random Measurements Performed: 15 | Nbr Biased Measurements Performed: 15

Alpha

Maximum:	3.0 dpm/100cm²
Minimum:	0.0 dpm/100cm²
Mean:	1.3 dpm/100cm²
Standard Deviation:	1.0
Transuranic DCGL$_W$:	20.0 dpm/100cm²

Media Sample Results

Nbr Random Required: 0 | Nbr Biased Required: 0

Nbr Random Collected: 0 | Nbr Biased Collected: 0

Conclusion - A comparison of the random, biased and QC measurement results against the PDSP Table 7-1 Surface Contamination Guideline limits was conducted; the comparison demonstrates that this survey unit passes the criterion specified in the PDSP.

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Survey Area: 5	Survey Unit: 988A01	Building: 988A

Description: Building 988A Interior and Exterior

Instrument Data Sheet

Inst/RCT Number	RCT ID	Analysis Date	Instr Model	Instru S/N	Probe Type	Calibration Due Dt	Instru Efficiency		A-Priori MDA (dpm/100cm²)		Survey Type
							Alpha	Beta	Alpha	Beta	
1	700831	11/23/04	Electra	1415	DP-6	04/21/05	0.224	NA	48.0	NA	T/S
2	712193	11/23/04	Electra	1665	DP-6	04/07/05	0.213	NA	48.0	NA	T/S
3	700831	11/23/04	Electra	1415	DP-6	04/21/05	0.224	NA	48.0	NA	Q
4	700831	11/23/04	Electra	3102	DP-6	05/18/05	0.220	NA	48.0	NA	T/S
5	712467	11/24/04	SAC-4	924	NA	02/04/05	0.330	NA	10.0	NA	R

Survey Types: T = Total Surface Activity, Q = TSA QC, S = Scan, R = Removable Surface Activity, I = Investigation

Survey Area: 5	Survey Unit: 988A01	Building: 988A
Description: Building 988A Interior and Exterior		

Random Removable Surface Activity Data Sheet

Random Measurement Location	Inst / RCT Nbr	Net Alpha (dpm/100cm²)	Net Beta (dpm/100cm²)	
988A01PRP-N001	5	1.5	N/A	
988A01PRP-N002	5	1.5	N/A	
988A01PRP-N003	5	0.0	N/A	
988A01PRP-N004	5	0.0	N/A	
988A01PRP-N005	5	0.0	N/A	
988A01PRP-N006	5	1.5	N/A	
988A01PRP-N007	5	1.5	N/A	
988A01PRP-N008	5	3.0	N/A	
988A01PRP-N009	5	1.5	N/A	
988A01PRP-N010	5	1.5	N/A	
988A01PRP-N011	5	3.0	N/A	
988A01PRP-N012	5	0.0	N/A	
988A01PRP-N013	5	0.0	N/A	
988A01PRP-N014	5	1.5	N/A	
988A01PRP-N015	5	1.5	N/A	

Survey Area: 5	Survey Unit: 988A01	Building: 988A

Description: Building 988A Interior and Exterior

Biased Removable Surface Activity Data Sheet

Biased Measurement Location	Inst / RCT Nbr	Net Alpha (dpm/100cm²)	Net Beta (dpm/100cm²)	
988A01PBP-N016	5	3.0	N/A	
988A01PBP-N017	5	3.0	N/A	
988A01PBP-N018	5	1.5	N/A	
988A01PBP-N019	5	1.5	N/A	
988A01PBP-N020	5	1.5	N/A	
988A01PBP-N021	5	0.0	N/A	
988A01PBP-N022	5	0.0	N/A	
988A01PBP-N023	5	1.5	N/A	
988A01PBP-N024	5	1.5	N/A	
988A01PBP-N025	5	0.0	N/A	
988A01PBP-N026	5	3.0	N/A	
988A01PBP-N027	5	1.5	N/A	
988A01PBP-N028	5	1.5	N/A	
988A01PBP-N029	5	0.0	N/A	
988A01PBP-N030	5	1.5	N/A	

Comments:

Survey Area: 5	Survey Unit: 988A01	Building: 988A
Description: Building 988A Interior and Exterior		

Random/QC Total Surface Activity Data Sheet

Random Measurement Location	Inst / RCT Nbr	Net Alpha (dpm/100cm²)	Net Beta (dpm/100cm²)	
988A01PRP-N001	1	16.0	N/A	
988A01PRP-N002	2	48.5	N/A	
988A01QRP-N002	3	38.0	N/A	
988A01PRP-N003	1	18.7	N/A	
988A01PRP-N004	2	1.6	N/A	
988A01PRP-N005	1	29.4	N/A	
988A01PRP-N006	2	17.6	N/A	
988A01PRP-N007	1	16.0	N/A	
988A01PRP-N008	2	-7.8	N/A	
988A01PRP-N009	1	9.8	N/A	
988A01PRP-N010	2	41.0	N/A	
988A01QRP-N010	3	36.6	N/A	
988A01PRP-N011	1	38.3	N/A	
988A01PRP-N012	2	0.2	N/A	
988A01PRP-N013	4	13.4	N/A	
988A01PRP-N014	1	12.9	N/A	
988A01PRP-N015	2	1.6	N/A	

Survey Area: 5	Survey Unit: 988A01	Building: 988A
Description: Building 988A Interior and Exterior		

Biased Total Surface Activity Data Sheet

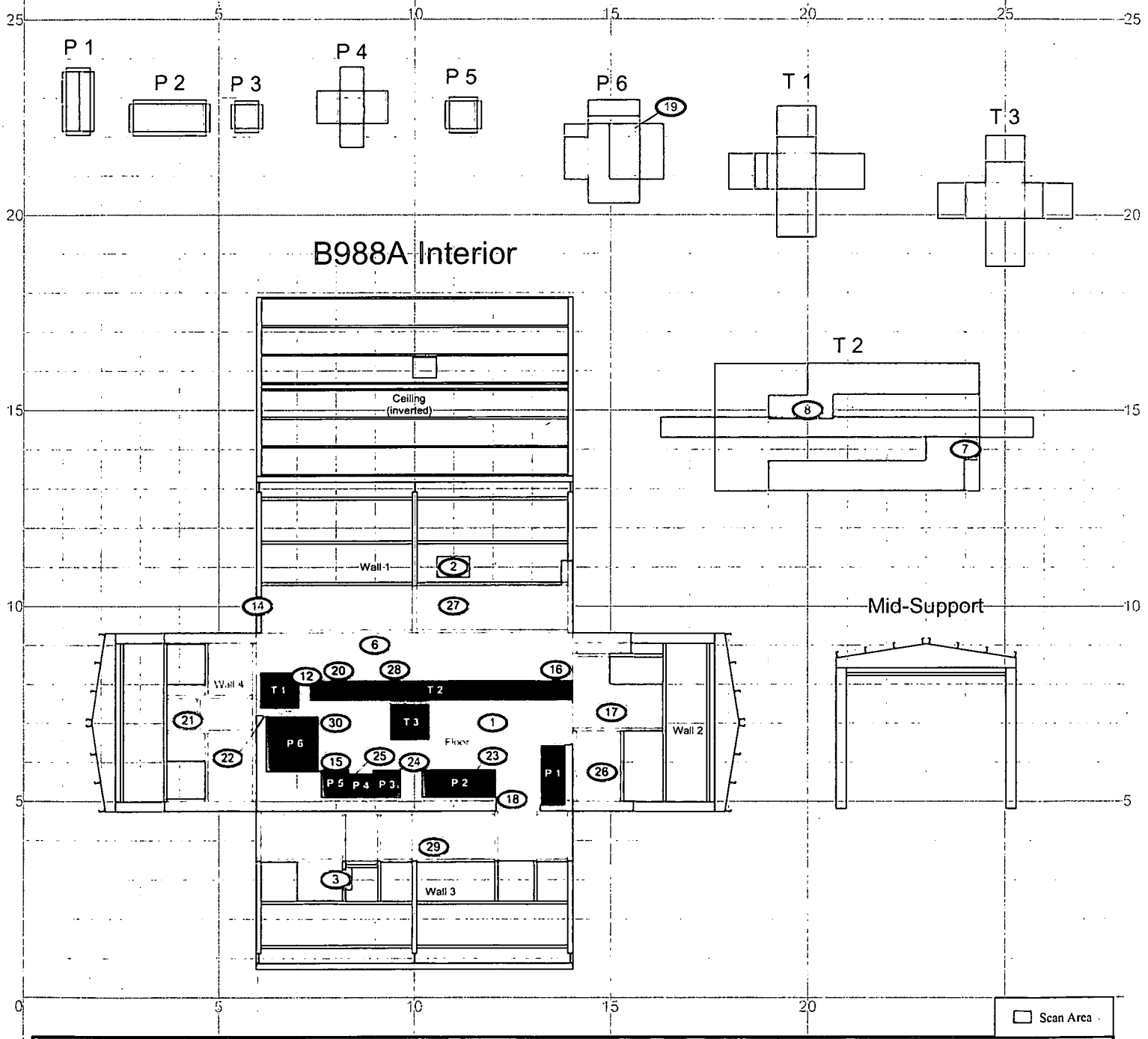
Biased Measurement Location	Inst / RCT Nbr	Net Alpha (dpm/100cm²)	Net Beta (dpm/100cm²)	
988A01PBP-N016	1	15.3	N/A	
988A01PBP-N017	2	13.8	N/A	
988A01PBP-N018	1	4.6	N/A	
988A01PBP-N019	2	9.1	N/A	
988A01PBP-N020	1	-1.2	N/A	
988A01PBP-N021	2	31.1	N/A	
988A01PBP-N022	1	-13.3	N/A	
988A01PBP-N023	2	21.7	N/A	
988A01PBP-N024	1	31.3	N/A	
988A01PBP-N025	2	17.1	N/A	
988A01PBP-N026	1	40.3	N/A	
988A01PBP-N027	2	9.1	N/A	
988A01PBP-N028	1	19.7	N/A	
988A01PBP-N029	2	27.8	N/A	
988A01PBP-N030	1	-7.0	N/A	

Comments:

RAD

SEWAGE TREATMENT PLANT RLC/PDS

Survey Area: 5 **Survey Unit: 988A01** **Classification: 3**
Building: 988A
Survey Unit Description: Building 988A Interior & Exterior
Total Area: 391 sq. m. **Total Floor Area: 47 sq. m.**



Scan Area

SURVEY MAP LEGEND

- Smear & TSA Location
- Smear, TSA & Sample Location
- Open/Inaccessible Area
- Area in Another Survey Unit

N

0 FEET 15
0 METERS 5

1 inch = 12 feet 1 grid sq. = 1 sq. m.

Scan Survey Information
Survey Instrument ID #(s) & RCT ID #(s):
1, 2, 4

U.S. Department of Energy
Rocky Flats Environmental Technology Site

Prepared by: GIS Dept. 303-966-7707

CH2MHILL
Communications Group

KAISER-HILL COMPANY

MAP ID: 03-0221/988A-INT-1-SC **Dec. 2, 2004**

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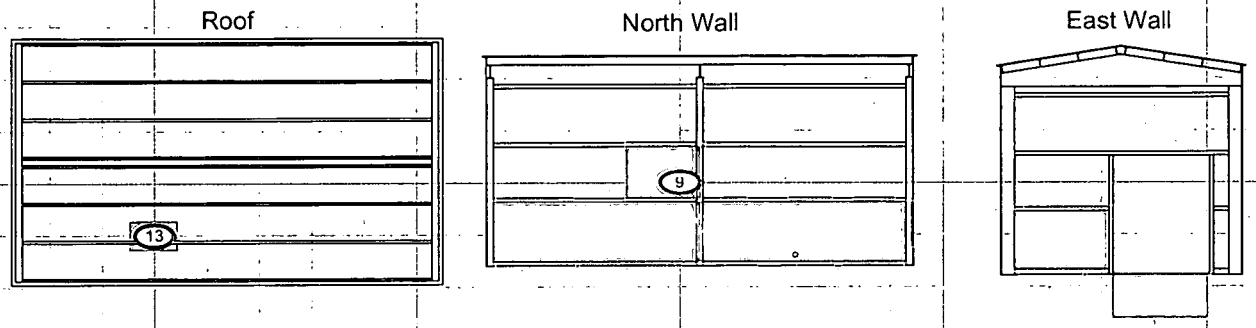
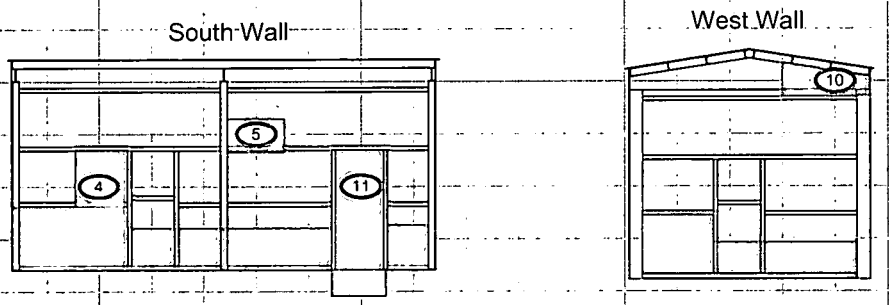
SEWAGE TREATMENT PLANT RLC/PDS

Survey Area: 5 **Survey Unit: 988A01** **Classification: 3**
Building: 988A
Survey Unit Description: Building 988A Interior & Exterior
Total Area: 391 sq. m. **Total Floor Area: 47 sq. m.**

B988A Exterior





Scan Area

SURVEY MAP LEGEND

- Smear & TSA Location
- Smear, TSA & Sample Location
- Open/Inaccessible Area
- Area in Another Survey Unit

N

0 FEET 15
0 METERS 5

1 inch = 12 feet 1 grid sq. = 1 sq. m.

Scan Survey Information
Survey Instrument ID #(s) & RCT ID #(s):
1, 2, 4

U.S. Department of Energy
Rocky Flats Environmental Technology Site

Prepared by: GIS Dept. 303-966-7707

CH2MHILL Communications Group

KAISER-HILL COMPANY

MAP ID: 03-0226/988A-INT-2-SC **Dec. 2, 2004**

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Survey Area: 5	Survey Unit: 995006	Building: 995

Description: Building 995, Interior and Exterior

Rocky Flats Environmental Technology Site
Final Radiological Survey Summary Results

Total Surface Activity Measurements

Nbr Random Measurements Required: 15 | Nbr Biased Measurements Required: 0 | Nbr QC Required: 2

Nbr Random Measurements Performed: 15 | Nbr Biased Measurements Performed: 30 | Nbr QC Performed: 3

Alpha

Maximum:	61.1 dpm/100cm²
Minimum:	-11.7 dpm/100cm²
Mean:	15.8 dpm/100cm²
Standard Deviation:	15.8
QC Maximum:	35.0 dpm/100cm²
QC Minimum:	24.7 dpm/100cm²
QC Mean:	30.1 dpm/100cm²
Transuranic DCGL$_W$:	100.0 dpm/100cm²
Transuranic DCGL$_{EMC}$:	300.0 dpm/100cm²

Removable Surface Activity Measurements

Nbr Random Measurements Required: 15 | Nbr Biased Measurements Required: 0

Nbr Random Measurements Performed: 15 | Nbr Biased Measurements Performed: 30

Alpha

Maximum:	4.5 dpm/100cm²
Minimum:	0.0 dpm/100cm²
Mean:	1.1 dpm/100cm²
Standard Deviation:	1.3
Transuranic DCGL$_W$:	20.0 dpm/100cm²

Media Sample Results

Nbr Random Required: 0 | Nbr Biased Required: 0

Nbr Random Collected: 0 | Nbr Biased Collected: 0

Conclusion - A comparison of the random, biased and QC measurement results against the PDSP Table 7-1 Surface Contamination Guideline limits was conducted; the comparison demonstrates that this survey unit passes the criterion specified in the PDSP.

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Survey Area: 5	Survey Unit: 995006	Building: 995

Description: Building 995, Interior and Exterior

Instrument Data Sheet

Inst/RCT Number	RCT ID	Analysis Date	Instr Model	Instru S/N	Probe Type	Calibration Due Dt	Instru Efficiency		A-Priori MDA (dpm/100cm²)		Survey Type
							Alpha	Beta	Alpha	Beta	
1	700831	11/23/04	Electra	1235	DP-6	03/16/05	0.218	NA	48.0	NA	T/S
2	711447	11/23/04	Electra	3552	DP-6	05/02/05	0.213	NA	48.0	NA	T/S
3	711447	11/23/04	Electra	668	DP-8	03/14/05	0.154	NA	48.0	NA	S
4	511390	11/23/04	Electra	1415	DP-6	04/21/05	0.224	NA	48.0	NA	Q/S
5	712193	11/24/04	SAC-4	924	NA	02/04/05	0.330	NA	10.0	NA	R
6	700831	11/24/04	Electra	1415	DP-6	04/21/05	0.224	NA	48.0	NA	T/S

Survey Types: T = Total Surface Activity, Q = TSA QC, S = Scan, R = Removable Surface Activity, I = Investigation

Survey Area: 5	Survey Unit: 995006	Building: 995

Description: Building 995, Interior and Exterior

Random Removable Surface Activity Data Sheet

Random Measurement Location	Inst / RCT Nbr	Net Alpha (dpm/100cm²)	Net Beta (dpm/100cm²)	
995006PRP-N001	5	0.0	N/A	
995006PRP-N002	5	3.0	N/A	
995006PRP-N003	5	0.0	N/A	
995006PRP-N004	5	0.0	N/A	
995006PRP-N005	5	0.0	N/A	
995006PRP-N006	5	1.5	N/A	
995006PRP-N007	5	0.0	N/A	
995006PRP-N008	5	1.5	N/A	
995006PRP-N009	5	0.0	N/A	
995006PRP-N010	5	3.0	N/A	
995006PRP-N011	5	0.0	N/A	
995006PRP-N012	5	1.5	N/A	
995006PRP-N013	5	1.5	N/A	
995006PRP-N014	5	0.0	N/A	
995006PRP-N015	5	0.0	N/A	

M5

Survey Area: 5	Survey Unit: 995006	Building: 995
Description: Building 995, Interior and Exterior		

Biased Removable Surface Activity Data Sheet

Biased Measurement Location	Inst / RCT Nbr	Net Alpha (dpm/100cm²)	Net Beta (dpm/100cm²)	
995006PBP-N016	5	0.0	N/A	
995006PBP-N017	5	0.0	N/A	
995006PBP-N018	5	0.0	N/A	
995006PBP-N019	5	4.5	N/A	
995006PBP-N020	5	0.0	N/A	
995006PBP-N021	5	1.5	N/A	
995006PBP-N022	5	0.0	N/A	
995006PBP-N023	5	0.0	N/A	
995006PBP-N024	5	3.0	N/A	
995006PBP-N025	5	0.0	N/A	
995006PBP-N026	5	1.5	N/A	
995006PBP-N027	5	0.0	N/A	
995006PBP-N028	5	1.5	N/A	
995006PBP-N029	5	0.0	N/A	
995006PBP-N030	5	0.0	N/A	
995006PBP-N031	5	0.0	N/A	
995006PBP-N032	5	3.0	N/A	
995006PBP-N033	5	1.5	N/A	
995006PBP-N034	5	1.5	N/A	
995006PBP-N035	5	3.0	N/A	
995006PBP-N036	5	1.5	N/A	
995006PBP-N037	5	4.5	N/A	
995006PBP-N038	5	1.5	N/A	
995006PBP-N039	5	1.5	N/A	
995006PBP-N040	5	0.0	N/A	
995006PBP-N041	5	1.5	N/A	
995006PBP-N042	5	0.0	N/A	

Survey Area: 5	Survey Unit: 995006	Building: 995

Description: Building 995, Interior and Exterior

Biased Removable Surface Activity Data Sheet

Biased Measurement Location	Inst / RCT Nbr	Net Alpha (dpm/100cm²)	Net Beta (dpm/100cm²)	
995006PBP-N043	5	0.0	N/A	
995006PBP-N044	5	1.5	N/A	
995006PBP-N045	5	3.0	N/A	

Comments:

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Survey Area: 5	Survey Unit: 995006	Building: 995
Description: Building 995, Interior and Exterior		

Random/QC Total Surface Activity Data Sheet

Random Measurement Location	Inst / RCT Nbr	Net Alpha (dpm/100cm²)	Net Beta (dpm/100cm²)	
995006PRP-N001	6	31.1	N/A	
995006PRP-N002	6	61.1	N/A	
995006PRP-N003	2	30.9	N/A	
995006PRP-N004	1	39.0	N/A	
995006QRP-N004	4	30.5	N/A	
995006PRP-N005	2	-0.5	N/A	
995006PRP-N006	2	4.2	N/A	
995006PRP-N007	6	17.8	N/A	
995006PRP-N008	1	29.8	N/A	
995006QRP-N008	4	24.7	N/A	
995006PRP-N009	1	35.7	N/A	
995006PRP-N010	6	13.3	N/A	
995006PRP-N011	1	-11.5	N/A	
995006PRP-N012	2	35.6	N/A	
995006QRP-N012	4	35.0	N/A	
995006PRP-N013	6	34.3	N/A	
995006PRP-N014	6	32.9	N/A	
995006PRP-N015	6	25.3	N/A	

Survey Area: 5	Survey Unit: 995006	Building: 995
Description: Building 995 Interior and Exterior		

Biased Total Surface Activity Data Sheet

Biased Measurement Location	Inst / RCT Nbr	Net Alpha (dpm/100cm²)	Net Beta (dpm/100cm²)	
995006PBP-N016	1	9.7	N/A	
995006PBP-N017	2	23.0	N/A	
995006PBP-N018	2	-2.3	N/A	
995006PBP-N019	2	13.7	N/A	
995006PBP-N020	2	7.1	N/A	
995006PBP-N021	1	22.1	N/A	
995006PBP-N022	1	-5.4	N/A	
995006PBP-N023	1	3.8	N/A	
995006PBP-N024	2	25.9	N/A	
995006PBP-N025	1	43.2	N/A	
995006PBP-N026	2	10.4	N/A	
995006PBP-N027	1	12.9	N/A	
995006PBP-N028	1	3.8	N/A	
995006PBP-N029	2	10.4	N/A	
995006PBP-N030	2	4.3	N/A	
995006PBP-N031	1	12.9	N/A	
995006PBP-N032	2	16.5	N/A	
995006PBP-N033	1	3.8	N/A	
995006PBP-N034	1	6.5	N/A	
995006PBP-N035	2	7.1	N/A	
995006PBP-N036	1	12.9	N/A	
995006PBP-N037	2	13.7	N/A	
995006PBP-N038	2	1.0	N/A	
995006PBP-N039	1	-2.7	N/A	
995006PBP-N040	1	6.5	N/A	
995006PBP-N041	1	12.9	N/A	
995006PBP-N042	2	46.5	N/A	

Survey Area: 5	Survey Unit: 995006	Building: 995

Description: Building 995, Interior and Exterior

Biased Total Surface Activity Data Sheet

Biased Measurement Location	Inst / RCT Nbr	Net Alpha (dpm/100cm²)	Net Beta (dpm/100cm²)	
995006PBP-N043	1	17.5	N/A	
995006PBP-N044	2	7.1	N/A	
995006PBP-N045	2	-11.7	N/A	

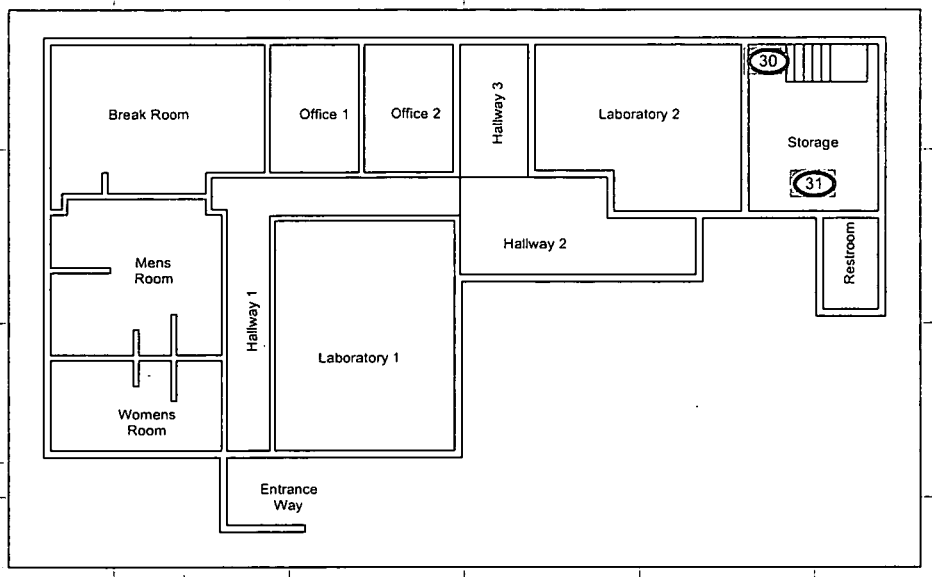
Comments:

80

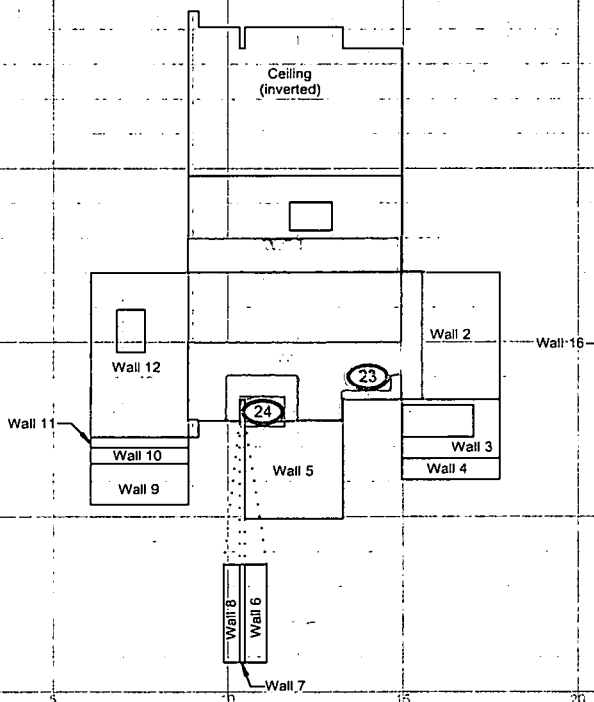
RLC/PDS FOR THE SEWAGE TREATMENT PLANT

Survey Area: 5 **Survey Unit: 995006** **Classification: 3**
Building: 995
Survey Unit Description: Building 995 Interior & Exterior
Total Area: 1732 sq. m. **Total Floor Area: 242 sq. m.**

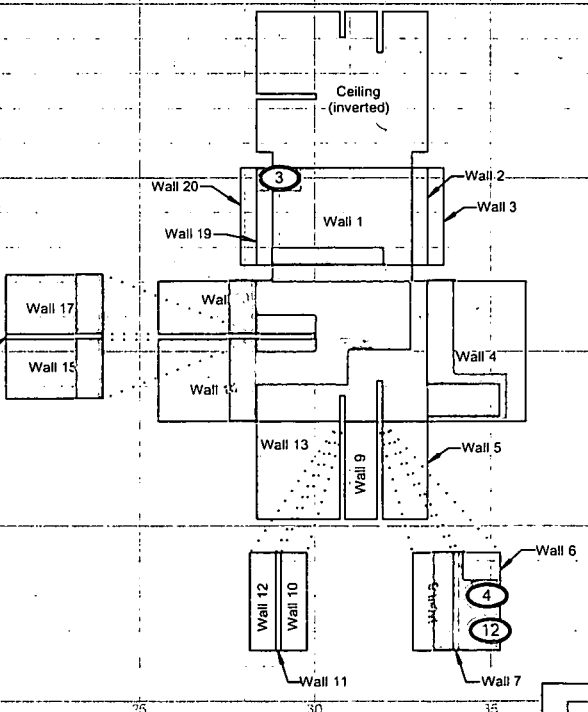
995 Interior



Break Room



Mens Room



Scan Area

SURVEY MAP LEGEND

- Smear & TSA Location
- Smear, TSA & Sample Location
- Open/Inaccessible Area
- Area in Another Survey Unit

N

0 FEET 25
0 METERS 8

1 inch = 18 feet 1 grid sq. = 1 sq. m.

Scan Survey Information
Survey Instrument ID #(s) & RCT ID #(s):
1, 2, 3, 4, 6

U.S. Department of Energy
Rocky Flats Environmental Technology Site

Prepared by: GIS Dept. 303-966-7707 Prepared for:

CH2MHILL Communications Group

KAISER-HILL

MAP ID: 03-0221/995-INT-SC July 9, 2003

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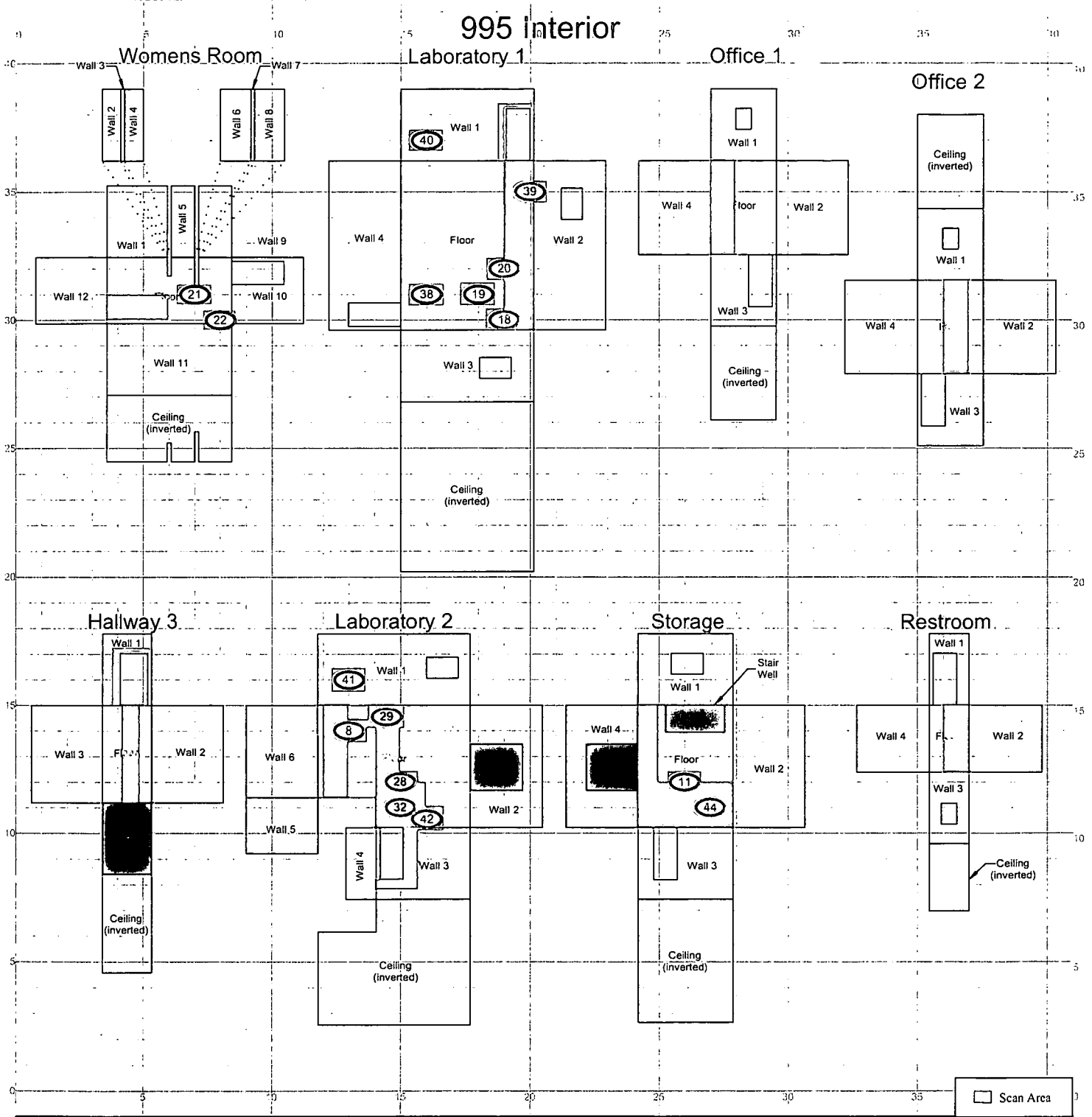
RLC/PDS FOR THE SEWAGE TREATMENT PLANT

Survey Area: 5 **Survey Unit: 995006** **Classification: 3**
Building: 995
Survey Unit Description: Building 995 Interior & Exterior
Total Area: 1732 sq. m. **Total Floor Area: 242 sq. m.**



SURVEY MAP LEGEND

- Smear & TSA Location
- Smear, TSA & Sample Location
- Open/Inaccessible Area
- Area in Another Survey Unit

N

0 FEET 25
0 METERS 8

1 inch = 18 feet 1 grid sq. = 1 sq. m.

Scan Survey Information
Survey Instrument ID #(s) & RCT ID #(s):
1, 2, 3, 4, 6

U.S. Department of Energy
Rocky Flats Environmental Technology Site

Prepared by: GIS Dept. 303-966-7707 Prepared for:

CH2MHILL Communications Group

KAISER-HILL COMPANY

MAP ID: 03-0221/995-INT-2-SC July 9, 2003

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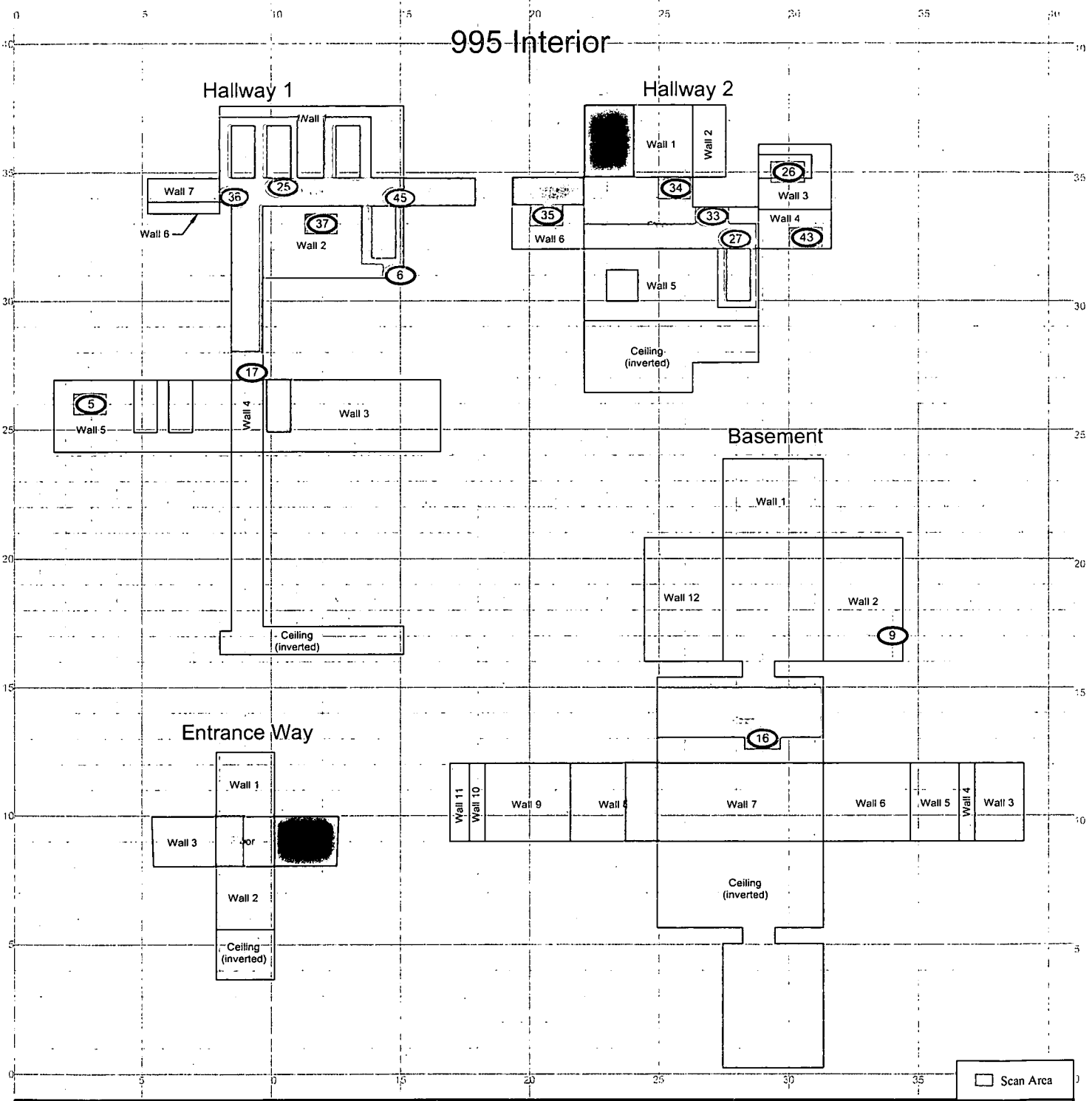
RLC/PDS FOR THE SEWAGE TREATMENT PLANT

Survey Area: 5 **Survey Unit: 995006** **Classification: 3**
Building: 995
Survey Unit Description: Building 995 Interior & Exterior
Total Area: 1732 sq. m. **Total Floor Area: 242 sq. m.**



SURVEY MAP LEGEND

- Smear & TSA Location
- Smear, TSA & Sample Location
- Open/Inaccessible Area
- Area in Another Survey Unit

N

0 FEET 25

0 METERS 8

1 inch = 18 feet 1 grid sq. = 1 sq. m.

Scan Survey Information
Survey Instrument ID #(s) & RCT ID #(s):
1, 2, 3, 4, 6

U.S. Department of Energy
Rocky Flats Environmental Technology Site

Prepared by: GIS Dept. 303-966-7707 Prepared for:

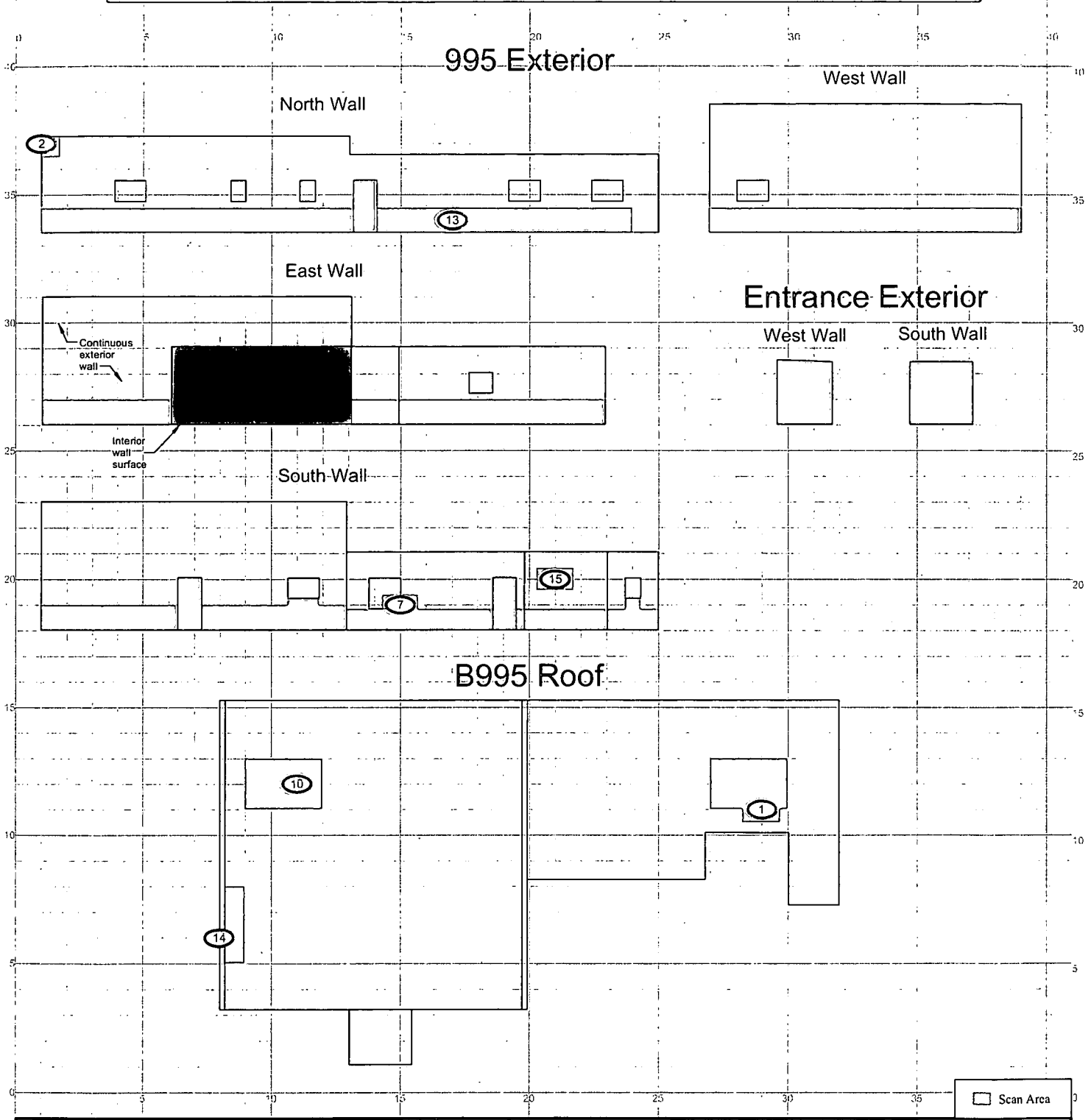
CH2MHILL Communications Group

KAISER-HILL COMPANY

MAP ID: 03-0221/995-INT-3-SC July 9, 2003

RLC/PDS FOR THE SEWAGE TREATMENT PLANT

Survey Area: 5 **Survey Unit: 995006** **Classification: 3**
Building: 995
Survey Unit Description: Building 995 Interior & Exterior
Total Area: 1732 sq. m. **Total Floor Area: 242 sq. m.**



SURVEY MAP LEGEND

- Smear & TSA Location
- Smear, TSA & Sample Location
- Open/Inaccessible Area
- Area in Another Survey Unit

N

0 FEET 25
0 METERS 8

1 inch = 18 feet 1 grid sq. = 1 sq. m.

Scan Survey Information
Survey Instrument ID #(s) & RCT ID #(s):
1, 2, 3, 4, 6

U.S. Department of Energy
Rocky Flats Environmental Technology Site

Prepared by: GIS Dept. 303-966-7707 Prepared for:

CH2MHILL Communications Group

KAISER-HILL COMPANY

MAP ID: 03-0221/995-EXT-SC July 9, 2003

Survey Area: 5	Survey Unit: 995AB1	Building: 995

Description: 995-AB-1 Aeration Basin (Interior)

Rocky Flats Environmental Technology Site
Final Radiological Survey Summary Results

Total Surface Activity Measurements

Nbr Random Measurements Required: 15 | Nbr Biased Measurements Required: 0 | Nbr QC Required: 2

Nbr Random Measurements Performed: 15 | Nbr Biased Measurements Performed: 15 | Nbr QC Performed: 2

Alpha

Maximum:	81.1 dpm/100cm²
Minimum:	-2.4 dpm/100cm²
Mean:	38.0 dpm/100cm²
Standard Deviation:	24.6
QC Maximum:	70.1 dpm/100cm²
QC Minimum:	46.0 dpm/100cm²
QC Mean:	58.0 dpm/100cm²
Transuranic $DCGL_W$:	100.0 dpm/100cm²
Transuranic $DCGL_{EMC}$:	300.0 dpm/100cm²

Removable Surface Activity Measurements

Nbr Random Measurements Required: 15 | Nbr Biased Measurements Required: 0

Nbr Random Measurements Performed: 15 | Nbr Biased Measurements Performed: 15

Alpha

Maximum:	0.9 dpm/100cm²
Minimum:	-1.8 dpm/100cm²
Mean:	-0.9 dpm/100cm²
Standard Deviation:	0.8
Transuranic $DCGL_W$:	20.0 dpm/100cm²

Media Sample Results

Nbr Random Required: 0 | Nbr Biased Required: 0

Nbr Random Collected: 0 | Nbr Biased Collected: 0

Conclusion - A comparison of the random, biased and QC measurement results against the PDSP Table 7-1 Surface Contamination Guideline limits was conducted; the comparison demonstrates that this survey unit passes the criterion specified in the PDSP.

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Survey Area: 5 **Survey Unit:** 995AB1 **Building:** 995

Description: 995-AB-1 Aeration Basin (Interior)

Instrument Data Sheet

Inst/RCT Number	RCT ID	Analysis Date	Instr Model	Instru S/N	Probe Type	Calibration Due Dt	Instru Efficiency		A-Priori MDA (dpm/100cm²)		Survey Type
							Alpha	Beta	Alpha	Beta	
1	700831	11/17/04	Electra	1582	DP-6	04/05/05	0.225	NA	48.0	NA	T/S
2	712193	11/17/04	Electra	1665	DP-6	04/07/05	0.213	NA	48.0	NA	T/S
3	511390	11/18/04	SAC-4	924	NA	02/04/05	0.330	NA	10.0	NA	R
4	511390	11/18/04	SAC-4	952	NA	02/12/05	0.330	NA	10.0	NA	R
5	711447	11/23/04	Electra	1415	DP-6	04/21/05	0.224	NA	48.0	NA	Q

Survey Types: T = Total Surface Activity, Q = TSA QC, S = Scan, R = Removable Surface Activity, I = Investigation

Survey Area: 5	Survey Unit: 995AB1	Building: 995
Description: 995-AB-1 Aeration Basin (Interior)		

Random Removable Surface Activity Data Sheet

Random Measurement Location	Inst / RCT Nbr	Net Alpha (dpm/100cm²)	Net Beta (dpm/100cm²)	
995AB1PRP-N001	3	-1.8	N/A	
995AB1PRP-N002	4	-0.6	N/A	
995AB1PRP-N003	3	-1.8	N/A	
995AB1PRP-N004	4	-0.6	N/A	
995AB1PRP-N005	3	-1.8	N/A	
995AB1PRP-N006	4	-0.6	N/A	
995AB1PRP-N007	3	-1.8	N/A	
995AB1PRP-N008	4	-0.6	N/A	
995AB1PRP-N009	3	-1.8	N/A	
995AB1PRP-N010	4	0.9	N/A	
995AB1PRP-N011	3	-1.8	N/A	
995AB1PRP-N012	4	-0.6	N/A	
995AB1PRP-N013	3	-0.3	N/A	
995AB1PRP-N014	4	-0.6	N/A	
995AB1PRP-N015	3	-1.8	N/A	

Survey Area: 5	Survey Unit: 995AB1	Building: 995

Description: 995-AB-1 Aeration Basin (Interior)

Biased Removable Surface Activity Data Sheet

Biased Measurement Location	Inst / RCT Nbr	Net Alpha (dpm/100cm²)	Net Beta (dpm/100cm²)	
995AB1PBP-N016	4	-0.6	N/A	
995AB1PBP-N017	3	-1.8	N/A	
995AB1PBP-N018	4	-0.6	N/A	
995AB1PBP-N019	3	-1.8	N/A	
995AB1PBP-N020	4	0.9	N/A	
995AB1PBP-N021	3	-1.8	N/A	
995AB1PBP-N022	4	-0.6	N/A	
995AB1PBP-N023	3	-0.3	N/A	
995AB1PBP-N024	4	-0.6	N/A	
995AB1PBP-N025	3	-0.3	N/A	
995AB1PBP-N026	4	-0.6	N/A	
995AB1PBP-N027	3	-0.3	N/A	
995AB1PBP-N028	4	-0.6	N/A	
995AB1PBP-N029	3	-1.8	N/A	
995AB1PBP-N030	4	-0.6	N/A	

Comments:

Survey Area: 5	Survey Unit: 995AB1	Building: 995

Description: 995-AB-1 Aeration Basin (Interior)

Random/QC Total Surface Activity Data Sheet

Random Measurement Location	Inst / RCT Nbr	Net Alpha (dpm/100cm²)	Net Beta (dpm/100cm²)	
995AB1PRP-N001	2	36.0	N/A	
995AB1QRP-N001	5	46.0	N/A	
995AB1PRP-N002	1	55.3	N/A	
995AB1PRP-N003	2	81.1	N/A	
995AB1PRP-N004	1	42.0	N/A	
995AB1PRP-N005	1	58.0	N/A	
995AB1PRP-N006	1	47.8	N/A	
995AB1PRP-N007	1	34.4	N/A	
995AB1PRP-N008	1	34.4	N/A	
995AB1PRP-N009	1	19.8	N/A	
995AB1PRP-N010	1	40.2	N/A	
995AB1PRP-N011	1	2.0	N/A	
995AB1PRP-N012	1	55.3	N/A	
995AB1PRP-N013	2	12.6	N/A	
995AB1PRP-N014	1	15.3	N/A	
995AB1PRP-N015	2	81.1	N/A	
995AB1QRP-N015	5	70.1	N/A	

Survey Area: 5	Survey Unit: 995AB1	Building: 995

Description: 995-AB-1 Aeration Basin (Interior)

Biased Total Surface Activity Data Sheet

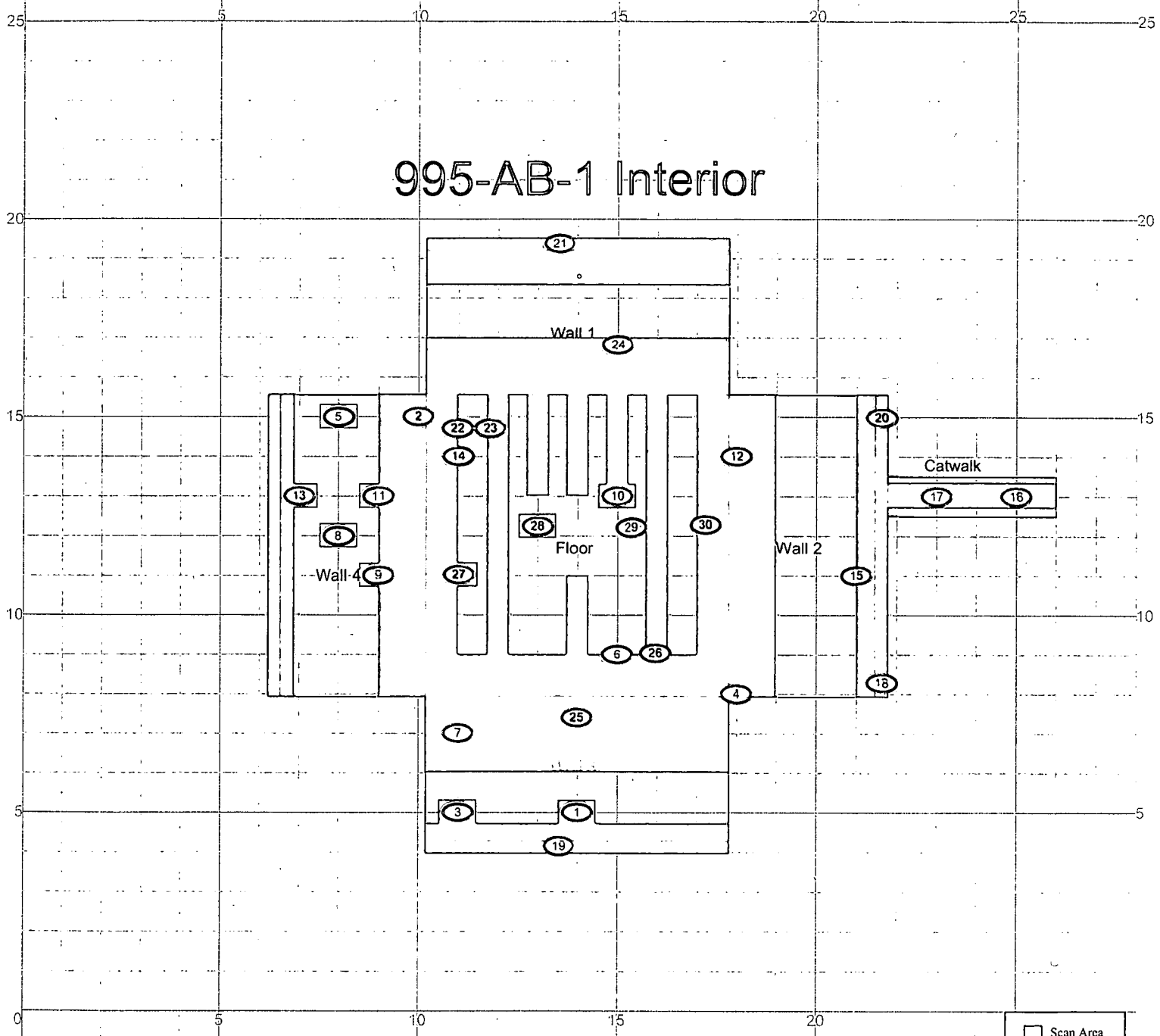
Biased Measurement Location	Inst / RCT Nbr	Net Alpha (dpm/100cm²)	Net Beta (dpm/100cm²)	
995AB1PBP-N016	2	27.9	N/A	
995AB1PBP-N017	2	51.3	N/A	
995AB1PBP-N018	2	73.4	N/A	
995AB1PBP-N019	2	64.0	N/A	
995AB1PBP-N020	2	80.9	N/A	
995AB1PBP-N021	2	29.3	N/A	
995AB1PBP-N022	1	10.9	N/A	
995AB1PBP-N023	1	-2.4	N/A	
995AB1PBP-N024	1	24.3	N/A	
995AB1PBP-N025	1	7.8	N/A	
995AB1PBP-N026	1	4.7	N/A	
995AB1PBP-N027	1	13.6	N/A	
995AB1PBP-N028	1	38.9	N/A	
995AB1PBP-N029	1	38.9	N/A	
995AB1PBP-N030	1	61.2	N/A	

Comments:

RLC/PDS FOR THE SEWAGE TREATMENT PLANT

Survey Area: 5 **Survey Unit: 995AB1** **Classification: 3**
Building: 995
Survey Unit Description: 995-AB-1 Aeration Basin (Interior)
Total Area: 179 sq. m. **Total Floor Area: 58 sq. m.**

995-AB-1 Interior



Scan Area

SURVEY MAP LEGEND

- Smear & TSA Location
- Smear, TSA & Sample Location
- Open/Inaccessible Area
- Area in Another Survey Unit

N

0 FEET 15
0 METERS 5

1 inch = 12 feet 1 grid sq. = 1 sq. m.

Scan Survey Information
Survey Instrument ID #(s) & RCT ID #(s):
1, 2

U.S. Department of Energy
Rocky Flats Environmental Technology Site

Prepared by: GIS Dept. 303-966-7707 **Prepared for:**

CH2MHILL Communications Group

KAISER-HILL COMPANY

MAP ID: 03-0226\995-AB-1_SC **Nov. 24, 2004**

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Survey Area: 5	Survey Unit: 995AB2	Building: 995

Description: 995-AB-2 Aeration Basin (Interior)

Rocky Flats Environmental Technology Site
Final Radiological Survey Summary Results

Total Surface Activity Measurements

Nbr Random Measurements Required: 15 | Nbr Biased Measurements Required: 0 | Nbr QC Required: 2

Nbr Random Measurements Performed: 15 | Nbr Biased Measurements Performed: 15 | Nbr QC Performed: 2

Alpha

Maximum:	93.3 dpm/100cm²
Minimum:	-12.9 dpm/100cm²
Mean:	38.6 dpm/100cm²
Standard Deviation:	32.2
QC Maximum:	68.5 dpm/100cm²
QC Minimum:	33.5 dpm/100cm²
QC Mean:	51.0 dpm/100cm²
Transuranic DCGLw:	100.0 dpm/100cm²
Transuranic DCGLEMC:	300.0 dpm/100cm²

Removable Surface Activity Measurements

Nbr Random Measurements Required: 15 | Nbr Biased Measurements Required: 0

Nbr Random Measurements Performed: 15 | Nbr Biased Measurements Performed: 15

Alpha

Maximum:	0.9 dpm/100cm²
Minimum:	-1.8 dpm/100cm²
Mean:	-1.0 dpm/100cm²
Standard Deviation:	0.7
Transuranic DCGLw:	20.0 dpm/100cm²

Media Sample Results

Nbr Random Required: 0 | Nbr Biased Required: 0

Nbr Random Collected: 0 | Nbr Biased Collected: 0

Conclusion - A comparison of the random, biased and QC measurement results against the PDSP Table 7-1 Surface Contamination Guideline limits was conducted; the comparison demonstrates that this survey unit passes the criterion specified in the PDSP.

Survey Area: 5	Survey Unit: 995AB2	Building: 995

Description: 995-AB-2 Aeration Basin (Interior)

Instrument Data Sheet

Inst/RCT Number	RCT ID	Analysis Date	Instr Model	Instru S/N	Probe Type	Calibration Due Dt	Instru Efficiency		A-Priori MDA (dpm/100cm²)		Survey Type
							Alpha	Beta	Alpha	Beta	
1	700831	11/17/04	Electra	1665	DP-6	04/07/05	0.213	NA	48.0	NA	T/Q/S
2	711447	11/17/04	Electra	1582	DP-6	04/05/05	0.225	NA	48.0	NA	T/Q/S
3	511390	11/18/04	SAC-4	924	NA	02/04/05	0.330	NA	10.0	NA	R
4	511390	11/18/04	SAC-4	952	NA	02/12/05	0.330	NA	10.0	NA	R
5	700831	11/24/04	Electra	3102	DP-6	05/18/05	0.220	NA	48.0	NA	T

Survey Types: T = Total Surface Activity, Q = TSA QC, S = Scan, R = Removable Surface Activity, I = Investigation

Survey Area: 5	Survey Unit: 995AB2	Building: 995

Description: 995-AB-2 Aeration Basin (Interior)

Random Removable Surface Activity Data Sheet

Random Measurement Location	Inst / RCT Nbr	Net Alpha (dpm/100cm²)	Net Beta (dpm/100cm²)	
995AB2PRP-N001	3	-0.3	N/A	
995AB2PRP-N002	4	-0.6	N/A	
995AB2PRP-N003	3	-0.3	N/A	
995AB2PRP-N004	4	-0.6	N/A	
995AB2PRP-N005	3	-0.3	N/A	
995AB2PRP-N006	4	-0.6	N/A	
995AB2PRP-N007	3	-1.8	N/A	
995AB2PRP-N008	4	-0.6	N/A	
995AB2PRP-N009	3	-1.8	N/A	
995AB2PRP-N010	4	-0.6	N/A	
995AB2PRP-N011	3	-1.8	N/A	
995AB2PRP-N012	4	-0.6	N/A	
995AB2PRP-N013	3	-1.8	N/A	
995AB2PRP-N014	4	-0.6	N/A	
995AB2PRP-N015	3	-1.8	N/A	

Survey Area: 5	Survey Unit: 995AB2	Building: 995

Description: 995-AB-2 Aeration Basin (Interior)

Biased Removable Surface Activity Data Sheet

Biased Measurement Location	Inst / RCT Nbr	Net Alpha (dpm/100cm²)	Net Beta (dpm/100cm²)	
995AB2PBP-N016	4	-0.6	N/A	
995AB2PBP-N017	3	-1.8	N/A	
995AB2PBP-N018	4	-0.6	N/A	
995AB2PBP-N019	3	-1.8	N/A	
995AB2PBP-N020	4	-0.6	N/A	
995AB2PBP-N021	3	-1.8	N/A	
995AB2PBP-N022	4	0.9	N/A	
995AB2PBP-N023	3	-1.8	N/A	
995AB2PBP-N024	4	-0.6	N/A	
995AB2PBP-N025	3	-0.3	N/A	
995AB2PBP-N026	4	-0.6	N/A	
995AB2PBP-N027	3	-1.8	N/A	
995AB2PBP-N028	4	-0.6	N/A	
995AB2PBP-N029	3	-1.8	N/A	
995AB2PBP-N030	4	-0.6	N/A	

Comments:

995

Survey Area: 5	Survey Unit: 995AB2	Building: 995
Description: 995-AB-2 Aeration Basin (Interior)		

Random/QC Total Surface Activity Data Sheet

Random Measurement Location	Inst / RCT Nbr	Net Alpha (dpm/100cm²)	Net Beta (dpm/100cm²)	
995AB2PRP-N001	1	31.5	N/A	
995AB2PRP-N002	1	8.1	N/A	
995AB2PRP-N003	2	68.3	N/A	
995AB2PRP-N004	1	45.6	N/A	
995AB2PRP-N005	1	58.3	N/A	
995AB2QRP-N005	2	33.5	N/A	
995AB2PRP-N006	2	91.8	N/A	
995AB2PRP-N007	1	31.5	N/A	
995AB2PRP-N008	1	4.8	N/A	
995AB2PRP-N009	2	14.9	N/A	
995AB2PRP-N010	1	48.9	N/A	
995AB2PRP-N011	1	70.5	N/A	
995AB2PRP-N012	2	80.3	N/A	
995AB2QRP-N013	1	68.5	N/A	
995AB2PRP-N013	2	53.6	N/A	
995AB2PRP-N014	1	14.2	N/A	
995AB2PRP-N015	1	58.3	N/A	

96

Survey Area: 5	Survey Unit: 995AB2	Building: 995
Description: 995-AB-2 Aeration Basin (Interior)		

Biased Total Surface Activity Data Sheet

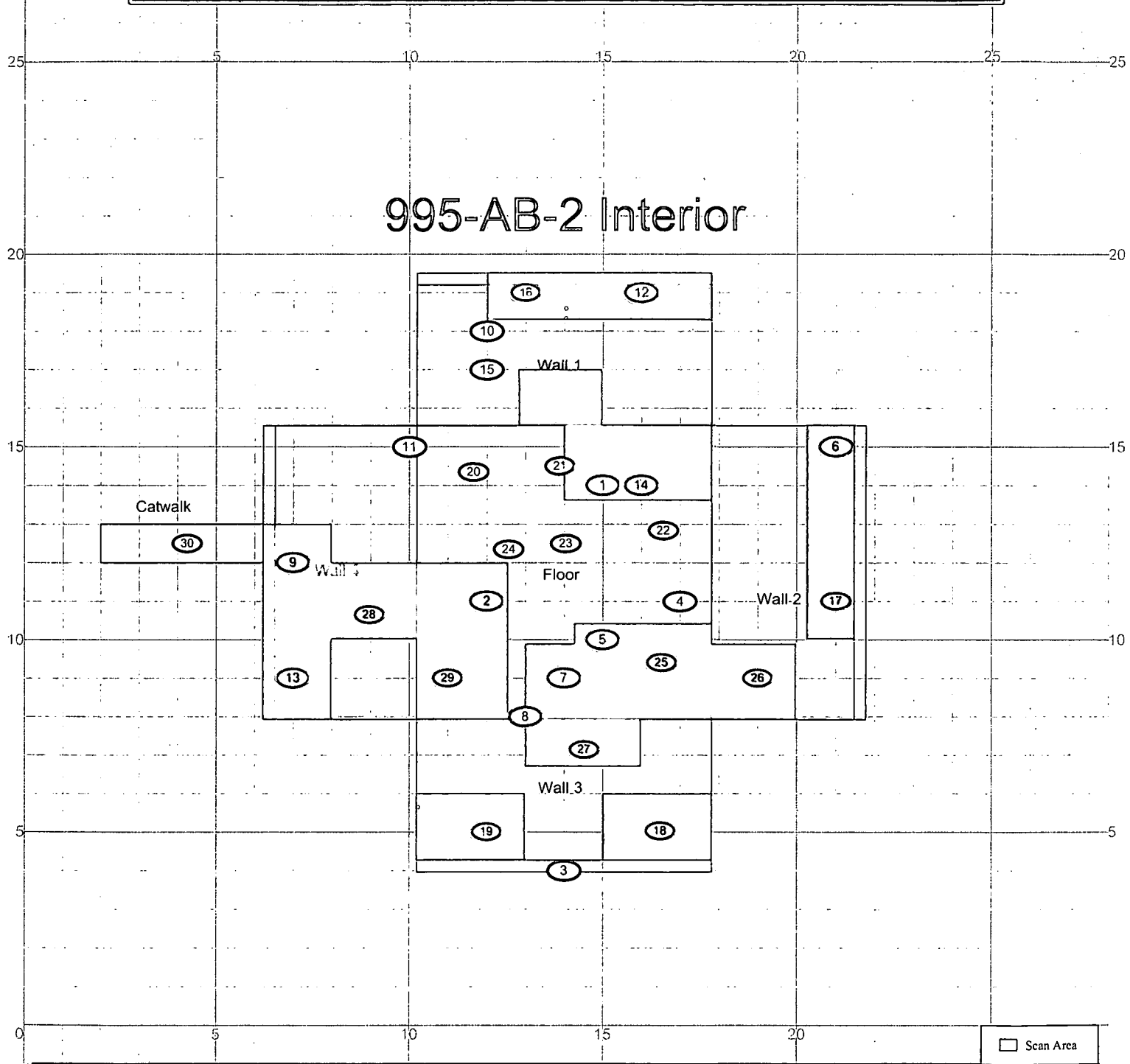
Biased Measurement Location	Inst / RCT Nbr	Net Alpha (dpm/100cm²)	Net Beta (dpm/100cm²)	
995AB2PBP-N016	2	27.9	N/A	
995AB2PBP-N017	2	93.3	N/A	
995AB2PBP-N018	2	36.8	N/A	
995AB2PBP-N019	2	48.8	N/A	
995AB2PBP-N020	1	-0.2	N/A	
995AB2PBP-N021	1	-12.9	N/A	
995AB2PBP-N022	1	-2.1	N/A	
995AB2PBP-N023	1	-3.5	N/A	
995AB2PBP-N024	1	-12.9	N/A	
995AB2PBP-N025	1	65.5	N/A	
995AB2PBP-N026	5	53.6	N/A	
995AB2PBP-N027	1	90.4	N/A	
995AB2PBP-N028	1	27.9	N/A	
995AB2PBP-N029	1	2.6	N/A	
995AB2PBP-N030	2	63.5	N/A	

Comments:

RLC/PDS FOR THE SEWAGE TREATMENT PLANT

Survey Area: 5 **Survey Unit: 995AB2** **Classification: 3**
Building: 995
Survey Unit Description: 995-AB-2 Aeration Basin (Interior)
Total Area: 179 sq. m. **Total Floor Area: 58 sq. m.**

995-AB-2 Interior



Scan Area

SURVEY MAP LEGEND

- Smear & TSA Location
- Smear, TSA & Sample Location
- Open/Inaccessible Area
- Area in Another Survey Unit

N

0 FEET 15
0 METERS 5

1 inch = 12 feet 1 grid sq. = 1 sq. m.

Scan Survey Information
Survey Instrument ID #(s) & RCT ID #(s):
1, 2

U.S. Department of Energy
Rocky Flats Environmental Technology Site

Prepared by: GIS Dept. 303-966-7707 **Prepared for:**

CH2MHILL Communications Group

KAISER-HILL COMPANY

MAP ID: 03-0226\995-AB-2_SC **Nov 23, 2004**

Survey Area: 5	Survey Unit: 995C01	Building: 995
Description: 995-C-1 Clarifier Basin (Interior)		

Rocky Flats Environmental Technology Site
Final Radiological Survey Summary Results

Total Surface Activity Measurements

Nbr Random Measurements Required: 15 | Nbr Biased Measurements Required: 0 | Nbr QC Required: 2

Nbr Random Measurements Performed: 15 | Nbr Biased Measurements Performed: 10 | Nbr QC Performed: 2

Alpha

Maximum:	65.0 dpm/100cm²
Minimum:	10.2 dpm/100cm²
Mean:	37.9 dpm/100cm²
Standard Deviation:	16.8
QC Maximum:	53.4 dpm/100cm²
QC Minimum:	46.2 dpm/100cm²
QC Mean:	49.8 dpm/100cm²
Transuranic DCGL$_W$:	100.0 dpm/100cm²
Transuranic DCGL$_{EMC}$:	300.0 dpm/100cm²

Removable Surface Activity Measurements

Nbr Random Measurements Required: 15 | Nbr Biased Measurements Required: 0

Nbr Random Measurements Performed: 15 | Nbr Biased Measurements Performed: 10

Alpha

Maximum:	4.2 dpm/100cm²
Minimum:	-0.3 dpm/100cm²
Mean:	1.6 dpm/100cm²
Standard Deviation:	1.2
Transuranic DCGL$_W$:	20.0 dpm/100cm²

Media Sample Results

Nbr Random Required: 0 | Nbr Biased Required: 0

Nbr Random Collected: 0 | Nbr Biased Collected: 0

Conclusion - A comparison of the random, biased and QC measurement results against the PDSP Table 7-1 Surface Contamination Guideline limits was conducted; the comparison demonstrates that this survey unit passes the criterion specified in the PDSP.

Survey Area: 5	Survey Unit: 995C01	Building: 995

Description: 995-C-1 Clarifier Basin (Interior)

Instrument Data Sheet

Inst/RCT Number	RCT ID	Analysis Date	Instr Model	Instru S/N	Probe Type	Calibration Due Dt	Instru Efficiency		A-Priori MDA (dpm/100cm²)		Survey Type
							Alpha	Beta	Alpha	Beta	
1	712193	11/19/04	Electra	1379	DP-6	05/09/05	0.223	NA	48.0	NA	T/S
2	700831	11/19/04	Electra	1415	DP-6	04/21/05	0.224	NA	48.0	NA	Q/S
3	700831	11/19/04	SAC-4	952	NA	02/12/05	0.330	NA	10.0	NA	R

Survey Types: T = Total Surface Activity, Q = TSA QC, S = Scan, R = Removable Surface Activity, I = Investigation

100

Survey Area: 5	Survey Unit: 995C01	Building: 995
Description: 995-C-1 Clarifier Basin (Interior)		

Random Removable Surface Activity Data Sheet

Random Measurement Location	Inst / RCT Nbr	Net Alpha (dpm/100cm²)	Net Beta (dpm/100cm²)	
995C01PRP-N001	3	1.2	N/A	
995C01PRP-N002	3	-0.3	N/A	
995C01PRP-N003	3	-0.3	N/A	
995C01PRP-N004	3	2.7	N/A	
995C01PRP-N005	3	1.2	N/A	
995C01PRP-N006	3	1.2	N/A	
995C01PRP-N007	3	1.2	N/A	
995C01PRP-N008	3	2.7	N/A	
995C01PRP-N009	3	2.7	N/A	
995C01PRP-N010	3	4.2	N/A	
995C01PRP-N011	3	1.2	N/A	
995C01PRP-N012	3	2.7	N/A	
995C01PRP-N013	3	2.7	N/A	
995C01PRP-N014	3	1.2	N/A	
995C01PRP-N015	3	1.2	N/A	

Survey Area: 5	Survey Unit: 995C01	Building: 995
Description: 995-C-1 Clarifier Basin (Interior)		

Biased Removable Surface Activity Data Sheet

Biased Measurement Location	Inst / RCT Nbr	Net Alpha (dpm/100cm²)	Net Beta (dpm/100cm²)	
995C01PBP-N016	3	1.2	N/A	
995C01PBP-N017	3	-0.3	N/A	
995C01PBP-N018	3	1.2	N/A	
995C01PBP-N019	3	1.2	N/A	
995C01PBP-N020	3	-0.3	N/A	
995C01PBP-N021	3	1.2	N/A	
995C01PBP-N022	3	2.7	N/A	
995C01PBP-N023	3	1.2	N/A	
995C01PBP-N024	3	2.7	N/A	
995C01PBP-N025	3	2.7	N/A	

Comments:

Survey Area: 5	Survey Unit: 995C01	Building: 995
Description: 995-C-1 Clarifier Basin (Interior)		

Random/QC Total Surface Activity Data Sheet

Random Measurement Location	Inst / RCT Nbr	Net Alpha (dpm/100cm²)	Net Beta (dpm/100cm²)	
995C01PRP-N001	1	26.8	N/A	
995C01PRP-N002	1	34.4	N/A	
995C01PRP-N003	1	10.2	N/A	
995C01PRP-N004	1	16.5	N/A	
995C01PRP-N005	1	30.0	N/A	
995C01QRP-N005	2	46.2	N/A	
995C01PRP-N006	1	37.1	N/A	
995C01PRP-N007	1	56.9	N/A	
995C01PRP-N008	1	26.8	N/A	
995C01QRP-N008	2	53.4	N/A	
995C01PRP-N009	1	40.3	N/A	
995C01PRP-N010	1	61.3	N/A	
995C01PRP-N011	1	62.7	N/A	
995C01PRP-N012	1	47.9	N/A	
995C01PRP-N013	1	47.9	N/A	
995C01PRP-N014	1	28.2	N/A	
995C01PRP-N015	1	16.5	N/A	

Survey Area: 5 **Survey Unit:** 995C01 **Building:** 995

Description: 995-C-1 Clarifier Basin (Interior)

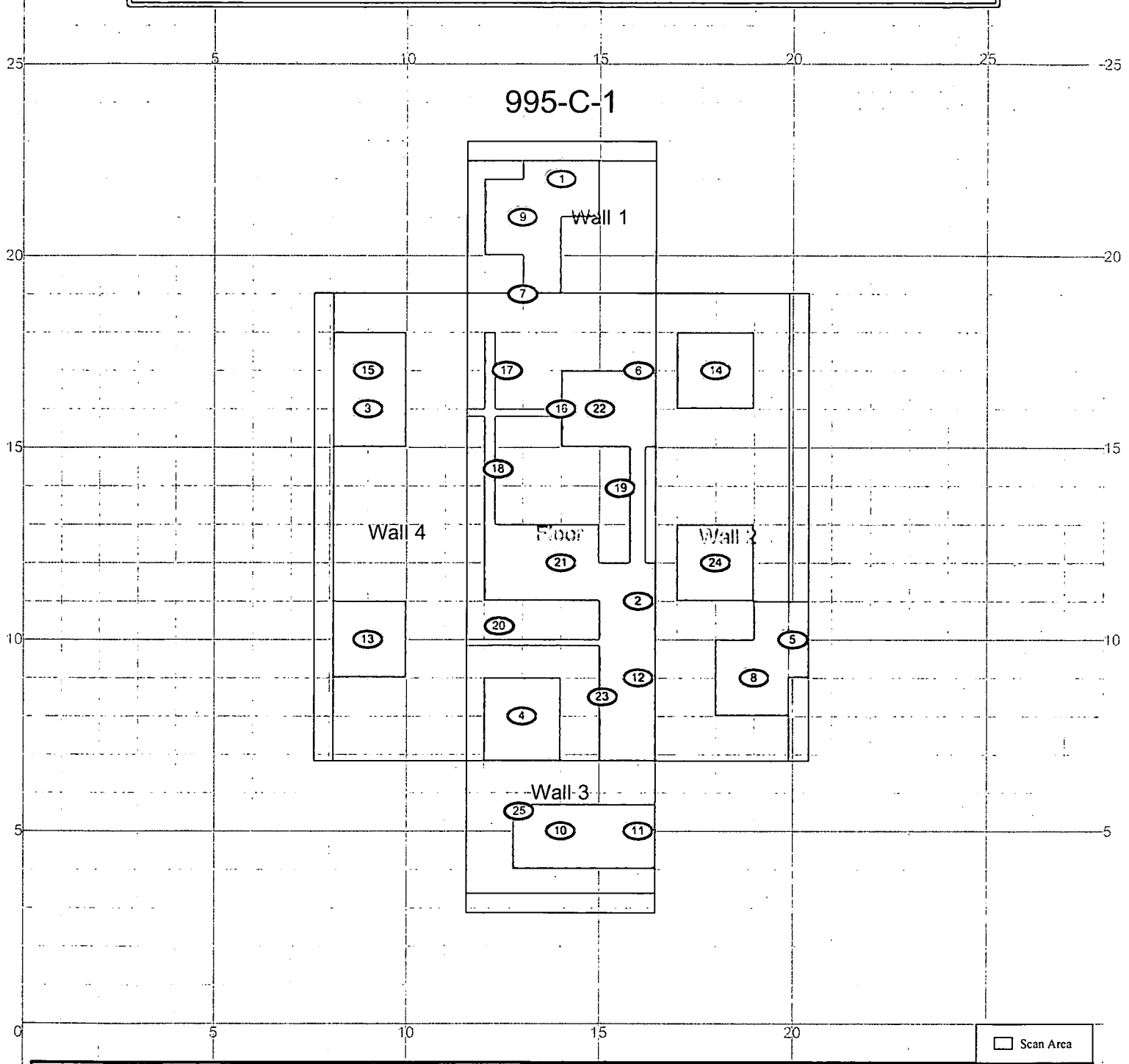
Biased Total Surface Activity Data Sheet

Biased Measurement Location	Inst / RCT Nbr	Net Alpha (dpm/100cm²)	Net Beta (dpm/100cm²)	
995C01PBP-N016	1	11.2	N/A	
995C01PBP-N017	1	14.4	N/A	
995C01PBP-N018	1	31.0	N/A	
995C01PBP-N019	1	51.6	N/A	
995C01PBP-N020	1	54.7	N/A	
995C01PBP-N021	1	45.7	N/A	
995C01PBP-N022	1	51.6	N/A	
995C01PBP-N023	1	65.0	N/A	
995C01PBP-N024	1	48.9	N/A	
995C01PBP-N025	1	29.2	N/A	

Comments:

RLC/PDS FOR THE SEWAGE TREATMENT PLANT

Survey Area: 5 **Survey Unit: 995C01** **Classification: 3**
Building: 995
Survey Unit Description: 995-C-1 Clarifier Basin (Interior)
Total Area: 49 sq. m. **Total Floor Area: 15 sq. m.**



SURVEY MAP LEGEND

- Smear & TSA Location
- Smear, TSA & Sample Location
- Open/Inaccessible Area
- Area in Another Survey Unit

N

0 FEET 6
0 METERS 2

1 inch = 6 feet 1 grid sq. = .25 sq. m.

Scan Area

Scan Survey Information
Survey Instrument ID #(s) & RCT ID #(s):
1, 2

U.S. Department of Energy
Rocky Flats Environmental Technology Site

Prepared by: GIS Dept. 303-966-7707 **Prepared for:**

CH2MHILL
Communications Group

KAISER-HILL COMPANY

MAP ID: 03-0226\995-C-1 **Nov. 23, 2004**

Survey Area: 5	Survey Unit: 995C02	Building: 995
Description: 995-C-2 Clarifier Basin (Interior)		

Rocky Flats Environmental Technology Site
Final Radiological Survey Summary Results

Total Surface Activity Measurements

Nbr Random Measurements Required: 15 | Nbr Biased Measurements Required: 0 | Nbr QC Required: 2

Nbr Random Measurements Performed: 15 | Nbr Biased Measurements Performed: 10 | Nbr QC Performed: 2

Alpha

Maximum:	58.2 dpm/100cm²
Minimum:	0.2 dpm/100cm²
Mean:	30.0 dpm/100cm²
Standard Deviation:	17.2
QC Maximum:	27.7 dpm/100cm²
QC Minimum:	16.5 dpm/100cm²
QC Mean:	22.1 dpm/100cm²
Transuranic $DCGL_W$:	100.0 dpm/100cm²
Transuranic $DCGL_{EMC}$:	300.0 dpm/100cm²

Removable Surface Activity Measurements

Nbr Random Measurements Required: 15 | Nbr Biased Measurements Required: 0

Nbr Random Measurements Performed: 15 | Nbr Biased Measurements Performed: 10

Alpha

Maximum:	4.5 dpm/100cm²
Minimum:	-0.3 dpm/100cm²
Mean:	1.7 dpm/100cm²
Standard Deviation:	1.3
Transuranic $DCGL_W$:	20.0 dpm/100cm²

Media Sample Results

Nbr Random Required: 0 | Nbr Biased Required: 0

Nbr Random Collected: 0 | Nbr Biased Collected: 0

Conclusion - A comparison of the random, biased and QC measurement results against the PDSP Table 7-1 Surface Contamination Guideline limits was conducted; the comparison demonstrates that this survey unit passes the criterion specified in the PDSP.

Survey Area: 5	Survey Unit: 995C02	Building: 995
Description: 995-C-2 Clarifier Basin (Interior)		

Instrument Data Sheet

Inst/RCT Number	RCT ID	Analysis Date	Instr Model	Instru S/N	Probe Type	Calibration Due Dt	Instru Efficiency		A-Priori MDA (dpm/100cm²)		Survey Type
							Alpha	Beta	Alpha	Beta	
1	700831	11/18/04	Electra	1665	DP-6	04/07/05	0.213	NA	48.0	NA	T/S
2	712467	11/18/04	Electra	3251	DP-6	01/07/05	0.218	NA	48.0	NA	T/S
3	712193	11/18/04	Electra	1665	DP-6	04/07/05	0.213	NA	48.0	NA	Q/S
4	712193	11/19/04	SAC-4	924	NA	02/04/05	0.330	NA	10.0	NA	R
5	712193	11/19/04	SAC-4	952	NA	02/12/05	0.330	NA	10.0	NA	R

Survey Types: T = Total Surface Activity, Q = TSA QC, S = Scan, R = Removable Surface Activity, I = Investigation

Survey Area: 5	Survey Unit: 995C02	Building: 995
Description: 995-C-2 Clarifier Basin (Interior)		

Random Removable Surface Activity Data Sheet

Random Measurement Location	Inst / RCT Nbr	Net Alpha (dpm/100cm²)	Net Beta (dpm/100cm²)	
995C02PRP-N001	4	1.5	N/A	
995C02PRP-N002	5	1.2	N/A	
995C02PRP-N003	4	1.5	N/A	
995C02PRP-N004	5	1.2	N/A	
995C02PRP-N005	4	3.0	N/A	
995C02PRP-N006	5	-0.3	N/A	
995C02PRP-N007	4	0.0	N/A	
995C02PRP-N008	5	-0.3	N/A	
995C02PRP-N009	4	1.5	N/A	
995C02PRP-N010	5	1.2	N/A	
995C02PRP-N011	4	1.5	N/A	
995C02PRP-N012	5	2.7	N/A	
995C02PRP-N013	4	4.5	N/A	
995C02PRP-N014	5	1.2	N/A	
995C02PRP-N015	4	3.0	N/A	

Survey Area: 5	Survey Unit: 995C02	Building: 995

Description: 995-C-2 Clarifier Basin (Interior)

Biased Removable Surface Activity Data Sheet

Biased Measurement Location	Inst / RCT Nbr	Net Alpha (dpm/100cm²)	Net Beta (dpm/100cm²)	
995C02PBP-N016	5	1.2	N/A	
995C02PBP-N017	4	1.5	N/A	
995C02PBP-N018	5	2.7	N/A	
995C02PBP-N019	4	3.0	N/A	
995C02PBP-N020	5	2.7	N/A	
995C02PBP-N021	4	0.0	N/A	
995C02PBP-N022	5	-0.3	N/A	
995C02PBP-N023	4	1.5	N/A	
995C02PBP-N024	5	2.7	N/A	
995C02PBP-N025	4	3.0	N/A	

Comments:

Survey Area: 5	Survey Unit: 995C02	Building: 995
Description: 995-C-2 Clarifier Basin (Interior)		

Random/QC Total Surface Activity Data Sheet

Random Measurement Location	Inst / RCT Nbr	Net Alpha (dpm/100cm²)	Net Beta (dpm/100cm²)	
995C02PRP-N001	1	32.8	N/A	
995C02PRP-N002	1	45.5	N/A	
995C02PRP-N003	1	58.2	N/A	
995C02PRP-N004	2	22.3	N/A	
995C02QRP-N004	3	27.7	N/A	
995C02PRP-N005	2	28.8	N/A	
995C02QRP-N005	3	16.5	N/A	
995C02PRP-N006	2	36.1	N/A	
995C02PRP-N007	1	39.4	N/A	
995C02PRP-N008	1	3.3	N/A	
995C02PRP-N009	1	48.8	N/A	
995C02PRP-N010	1	42.2	N/A	
995C02PRP-N011	1	31.4	N/A	
995C02PRP-N012	1	9.4	N/A	
995C02PRP-N013	1	8.0	N/A	
995C02PRP-N014	1	42.2	N/A	
995C02PRP-N015	2	30.1	N/A	

110

Survey Area: 5	Survey Unit: 995C02	Building: 995

Description: 995-C-2 Clarifier Basin (Interior)

Biased Total Surface Activity Data Sheet

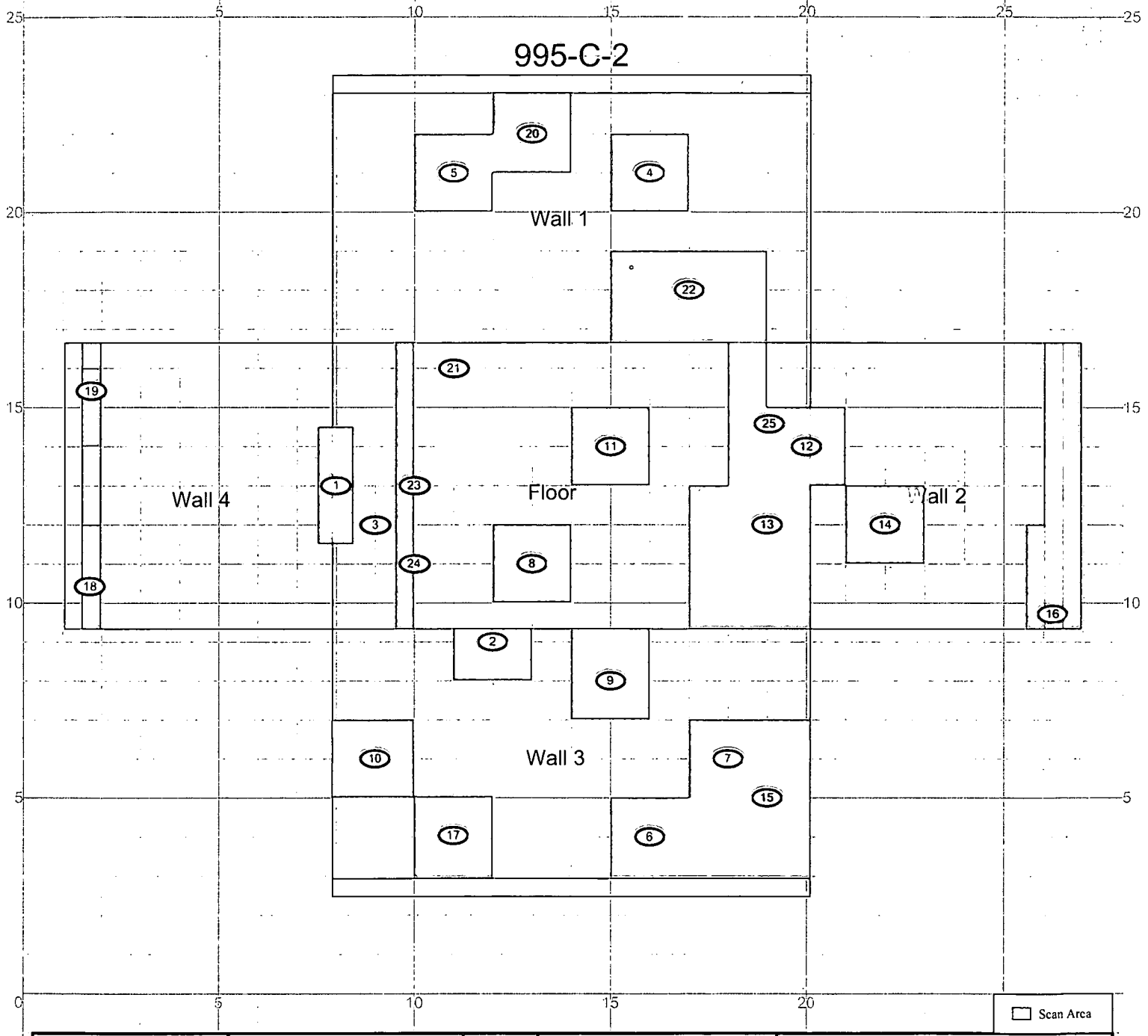
Biased Measurement Location	Inst / RCT Nbr	Net Alpha (dpm/100cm²)	Net Beta (dpm/100cm²)	
995C02PBP-N016	2	55.3	N/A	
995C02PBP-N017	2	52.5	N/A	
995C02PBP-N018	2	0.2	N/A	
995C02PBP-N019	2	40.1	N/A	
995C02PBP-N020	2	36.9	N/A	
995C02PBP-N021	1	12.1	N/A	
995C02PBP-N022	1	35.5	N/A	
995C02PBP-N023	1	7.4	N/A	
995C02PBP-N024	1	8.8	N/A	
995C02PBP-N025	1	21.4	N/A	

Comments:

2/1

RLC/PDS FOR THE SEWAGE TREATMENT PLANT

Survey Area: 5 **Survey Unit: 995C02** **Classification: 3**
Building: 995
Survey Unit Description: 995-C-2 Clarifier Basin (Interior)
Total Area: 89 sq. m. **Total Floor Area: 22 sq. m.**



Scan Area

SURVEY MAP LEGEND

- Smear & TSA Location
- Smear, TSA & Sample Location
- Open/Inaccessible Area
- Area in Another Survey Unit

N

0 FEET 6
0 METERS 2

1 inch = 6 feet 1 grid sq. = .25 sq. m.

Scan Survey Information
Survey Instrument ID #(s) & RCT ID #(s):
1, 2, 3

U.S. Department of Energy
Rocky Flats Environmental Technology Site

Prepared by: GIS Dept. 303-966-7707 **Prepared for:**

CH2MHILL
Communications Group

KAISER-HILL COMPANY

MAP ID: 03-0226\995-C-2_SC **Nov. 23, 2004**

112

Survey Area: 5	Survey Unit: 995C03	Building: 995
Description: 995-C-3 Clarifier Basin (Interior)		

Rocky Flats Environmental Technology Site
Final Radiological Survey Summary Results

Total Surface Activity Measurements

Nbr Random Measurements Required: 15 | Nbr Biased Measurements Required: 0 | Nbr QC Required: 2

Nbr Random Measurements Performed: 15 | Nbr Biased Measurements Performed: 10 | Nbr QC Performed: 2

Alpha

Maximum:	91.1 dpm/100cm²
Minimum:	-4.8 dpm/100cm²
Mean:	32.0 dpm/100cm²
Standard Deviation:	22.2
QC Maximum:	62.7 dpm/100cm²
QC Minimum:	42.5 dpm/100cm²
QC Mean:	52.6 dpm/100cm²
Transuranic DCGL$_W$:	100.0 dpm/100cm²
Transuranic DCGL$_{EMC}$:	300.0 dpm/100cm²

Removable Surface Activity Measurements

Nbr Random Measurements Required: 15 | Nbr Biased Measurements Required: 0

Nbr Random Measurements Performed: 15 | Nbr Biased Measurements Performed: 10

Alpha

Maximum:	4.2 dpm/100cm²
Minimum:	-0.3 dpm/100cm²
Mean:	1.4 dpm/100cm²
Standard Deviation:	1.4
Transuranic DCGL$_W$:	20.0 dpm/100cm²

Media Sample Results

Nbr Random Required: 0 | Nbr Biased Required: 0

Nbr Random Collected: 0 | Nbr Biased Collected: 0

Conclusion - A comparison of the random, biased and QC measurement results against the PDSP Table 7-1 Surface Contamination Guideline limits was conducted; the comparison demonstrates that this survey unit passes the criterion specified in the PDSP.

Survey Area: 5	Survey Unit: 995C03	Building: 995

Description: 995-C-3 Clarifier Basin (Interior)

Instrument Data Sheet

Inst/RCT Number	RCT ID	Analysis Date	Instr Model	Instru S/N	Probe Type	Calibration Due Dt	Instru Efficiency		A-Priori MDA (dpm/100cm²)		Survey Type
							Alpha	Beta	Alpha	Beta	
1	700831	11/18/04	Electra	1665	DP-6	04/07/05	0.213	NA	48.0	NA	T/S
2	712467	11/18/04	Electra	3251	DP-6	01/07/05	0.218	NA	48.0	NA	T/I/S
3	712193	11/18/04	Electra	1665	DP-6	04/07/05	0.213	NA	48.0	NA	Q/S
4	712193	11/19/04	SAC-4	924	NA	02/04/05	0.330	NA	10.0	NA	R
5	712193	11/19/04	SAC-4	952	NA	02/12/05	0.330	NA	10.0	NA	R

Survey Types: T = Total Surface Activity, Q = TSA QC, S = Scan, R = Removable Surface Activity, I = Investigation

114

Survey Area: 5	Survey Unit: 995C03	Building: 995
Description: 995-C-3 Clarifier Basin (Interior)		

Random Removable Surface Activity Data Sheet

Random Measurement Location	Inst / RCT Nbr	Net Alpha (dpm/100cm²)	Net Beta (dpm/100cm²)	
995C03PRP-N001	4	0.0	N/A	
995C03PRP-N002	5	4.2	N/A	
995C03PRP-N003	4	0.0	N/A	
995C03PRP-N004	5	1.2	N/A	
995C03PRP-N005	4	1.5	N/A	
995C03PRP-N006	5	-0.3	N/A	
995C03PRP-N007	4	1.5	N/A	
995C03PRP-N008	5	1.2	N/A	
995C03PRP-N009	4	3.0	N/A	
995C03PRP-N010	5	1.2	N/A	
995C03PRP-N011	4	0.0	N/A	
995C03PRP-N012	5	4.2	N/A	
995C03PRP-N013	4	0.0	N/A	
995C03PRP-N014	5	1.2	N/A	
995C03PRP-N015	4	1.5	N/A	

Survey Area: 5	Survey Unit: 995C03	Building: 995

Description: 995-C-3 Clarifier Basin (Interior)

Biased Removable Surface Activity Data Sheet

Biased Measurement Location	Inst / RCT Nbr	Net Alpha (dpm/100cm²)	Net Beta (dpm/100cm²)	
995C03PBP-N016	5	1.2	N/A	
995C03PBP-N017	4	3.0	N/A	
995C03PBP-N018	5	1.2	N/A	
995C03PBP-N019	4	3.0	N/A	
995C03PBP-N020	5	-0.3	N/A	
995C03PBP-N021	4	3.0	N/A	
995C03PBP-N022	5	2.7	N/A	
995C03PBP-N023	4	0.0	N/A	
995C03PBP-N024	5	-0.3	N/A	
995C03PBP-N025	4	1.5	N/A	

Comments:

116

Survey Area: 5	Survey Unit: 995C03	Building: 995
Description: 995-C-3 Clarifier Basin (Interior)		

Random/QC Total Surface Activity Data Sheet

Random Measurement Location	Inst / RCT Nbr	Net Alpha (dpm/100cm²)	Net Beta (dpm/100cm²)	
995C03PRP-N001	1	27.4	N/A	
995C03PRP-N002	1	30.7	N/A	
995C03PRP-N003	1	36.8	N/A	
995C03PRP-N004	1	40.1	N/A	
995C03IRP-N005	2	67.4	N/A	
995C03QRP-N005	3	62.7	N/A	
995C03PRP-N006	1	21.3	N/A	
995C03PRP-N007	1	38.2	N/A	
995C03PRP-N008	1	40.1	N/A	
995C03PRP-N009	1	14.8	N/A	
995C03PRP-N010	1	21.3	N/A	
995C03PRP-N011	1	12.0	N/A	
995C03PRP-N012	2	50.7	N/A	
995C03QRP-N012	3	42.5	N/A	
995C03PRP-N013	1	7.3	N/A	
995C03PRP-N014	1	42.9	N/A	
995C03PRP-N015	1	46.2	N/A	

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Survey Area: 5	Survey Unit: 995C03	Building: 995
Description: 995-C-3 Clarifier Basin (Interior)		

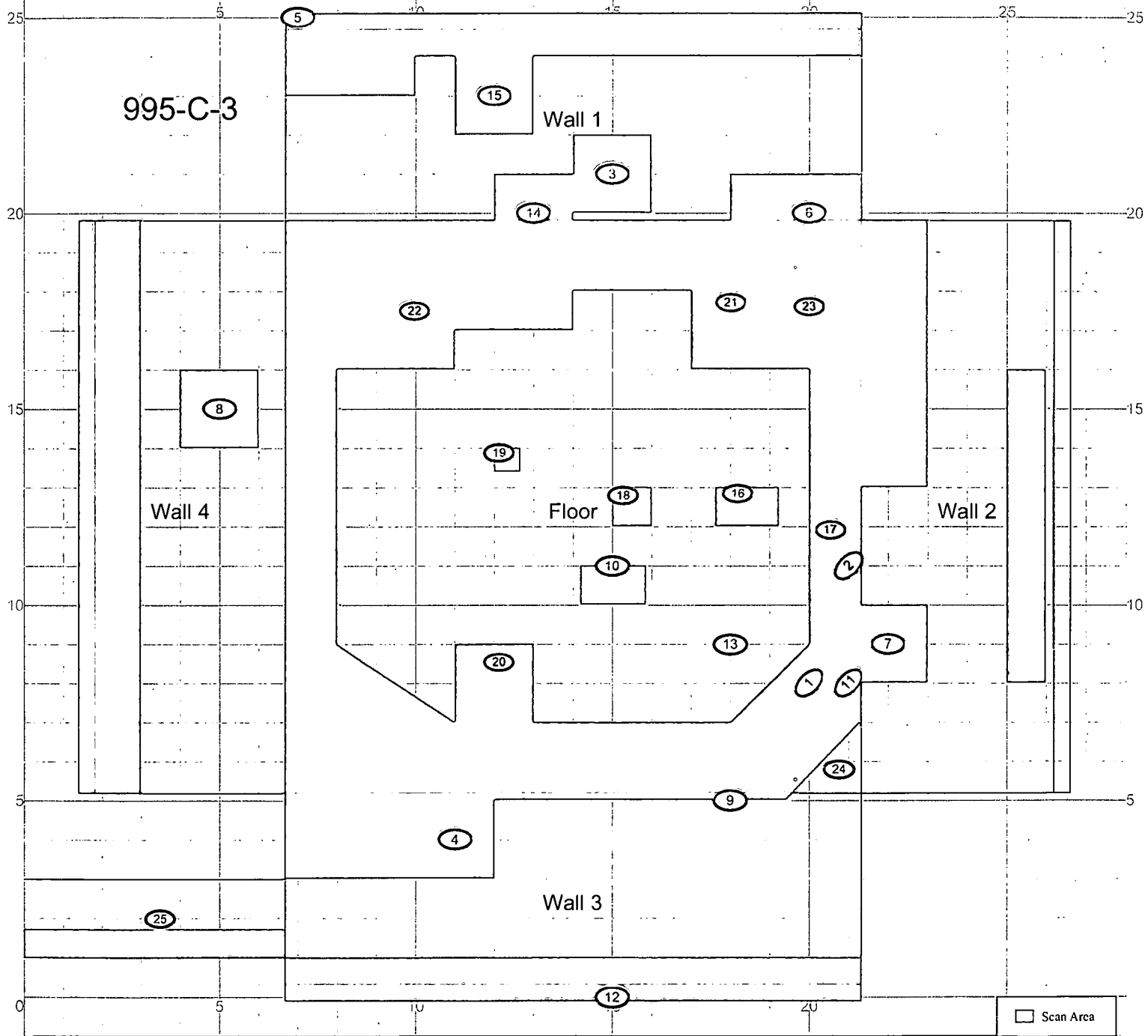
Biased Total Surface Activity Data Sheet

Biased Measurement Location	Inst / RCT Nbr	Net Alpha (dpm/100cm²)	Net Beta (dpm/100cm²)	
995C03PBP-N016	1	-4.8	N/A	
995C03PBP-N017	1	12.1	N/A	
995C03PBP-N018	1	-2.0	N/A	
995C03PBP-N019	1	6.0	N/A	
995C03PBP-N020	1	40.2	N/A	
995C03PBP-N021	1	26.2	N/A	
995C03PBP-N022	1	30.9	N/A	
995C03PBP-N023	2	43.4	N/A	
995C03PBP-N024	2	91.1	N/A	
995C03PBP-N025	2	60.4	N/A	

Comments: The Initial Sample Net Activity for Location 5 was 156.2 dpm/100cm2. This location was sealed, allowed to decay, and re-surveyed. Re-survey results are reported. No further investigation is required.

RLC/PDS FOR THE SEWAGE TREATMENT PLANT

Survey Area: 5 **Survey Unit: 995C03** **Classification: 3**
Building: 995
Survey Unit Description: 995-C-3 Clarifer Basin (Interior)
Total Area: 131 sq. m. **Total Floor Area: 54 sq. m.**



Scan Area

SURVEY MAP LEGEND

- Smear & TSA Location
- Smear, TSA & Sample Location
- Open/Inaccessible Area
- Area in Another Survey Unit

N

0 FEET 6
0 METERS 2

1 inch = 6 feet 1 grid sq. = .25 sq. m.

Scan Survey Information
Survey Instrument ID #(s) & RCT ID #(s):
1, 2, 3

U.S. Department of Energy
Rocky Flats Environmental Technology Site

Prepared by: GIS Dept. 303-966-7707 Prepared for:

CH2MHILL Communications Group

KAISER-HILL COMPANY

MAP ID: 03-0226\995-C-3_SC Dec. 1, 2004

119

Survey Area: 5	Survey Unit: 995C04	Building: 995
Description: 995-C-4 Clarifier Basin (Interior)		

Rocky Flats Environmental Technology Site
Final Radiological Survey Summary Results

Total Surface Activity Measurements

Nbr Random Measurements Required: 15 | Nbr Biased Measurements Required: 0 | Nbr QC Required: 2

Nbr Random Measurements Performed: 15 | Nbr Biased Measurements Performed: 10 | Nbr QC Performed: 2

Alpha

Maximum:	96.5 dpm/100cm²
Minimum:	20.4 dpm/100cm²
Mean:	54.2 dpm/100cm²
Standard Deviation:	25.4
QC Maximum:	82.9 dpm/100cm²
QC Minimum:	74.9 dpm/100cm²
QC Mean:	78.9 dpm/100cm²
Transuranic $DCGL_W$:	100.0 dpm/100cm²
Transuranic $DCGL_{EMC}$:	300.0 dpm/100cm²

Removable Surface Activity Measurements

Nbr Random Measurements Required: 15 | Nbr Biased Measurements Required: 0

Nbr Random Measurements Performed: 15 | Nbr Biased Measurements Performed: 10

Alpha

Maximum:	6.1 dpm/100cm²
Minimum:	0.0 dpm/100cm²
Mean:	1.7 dpm/100cm²
Standard Deviation:	1.6
Transuranic $DCGL_W$:	20.0 dpm/100cm²

Media Sample Results

Nbr Random Required: 0 | Nbr Biased Required: 0

Nbr Random Collected: 0 | Nbr Biased Collected: 0

Conclusion - A comparison of the random, biased and QC measurement results against the PDSP Table 7-1 Surface Contamination Guideline limits was conducted; the comparison demonstrates that this survey unit passes the criterion specified in the PDSP.

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Survey Area: 5	Survey Unit: 995C04	Building: 995

Description: 995-C-4 Clarifier Basin (Interior)

Instrument Data Sheet

Inst/RCT Number	RCT ID	Analysis Date	Instr Model	Instru S/N	Probe Type	Calibration Due Dt	Instru Efficiency		A-Priori MDA (dpm/100cm²)		Survey Type
							Alpha	Beta	Alpha	Beta	
1	712467	11/18/04	Electra	3104	DP-6	03/17/04	0.210	NA	48.0	NA	T/S
2	511390	11/18/04	Electra	1665	DP-6	04/07/05	0.213	NA	48.0	NA	Q/S
3	712193	11/24/04	SAC-4	924	NA	02/04/05	0.330	NA	10.0	NA	R

Survey Types: T = Total Surface Activity, Q = TSA QC, S = Scan, R = Removable Surface Activity, I = Investigation

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Survey Area: 5	Survey Unit: 995C04	Building: 995
Description: 995-C-4 Clarifier Basin (Interior)		

Random Removable Surface Activity Data Sheet

Random Measurement Location	Inst / RCT Nbr	Net Alpha (dpm/100cm²)	Net Beta (dpm/100cm²)	
995C04PRP-N001	3	1.5	N/A	
995C04PRP-N002	3	4.5	N/A	
995C04PRP-N003	3	3.0	N/A	
995C04PRP-N004	3	0.0	N/A	
995C04PRP-N005	3	0.0	N/A	
995C04PRP-N006	3	1.5	N/A	
995C04PRP-N007	3	1.5	N/A	
995C04PRP-N008	3	3.0	N/A	
995C04PRP-N009	3	1.5	N/A	
995C04PRP-N010	3	0.0	N/A	
995C04PRP-N011	3	1.5	N/A	
995C04PRP-N012	3	6.1	N/A	
995C04PRP-N013	3	3.0	N/A	
995C04PRP-N014	3	1.5	N/A	
995C04PRP-N015	3	1.5	N/A	

Survey Area: 5	Survey Unit: 995C04	Building: 995
Description: 995-C-4 Clarifier Basin (Interior)		

Biased Removable Surface Activity Data Sheet

Biased Measurement Location	Inst / RCT Nbr	Net Alpha (dpm/100cm²)	Net Beta (dpm/100cm²)	
995C04PBP-N016	3	0.0	N/A	
995C04PBP-N017	3	0.0	N/A	
995C04PBP-N018	3	1.5	N/A	
995C04PBP-N019	3	4.5	N/A	
995C04PBP-N020	3	0.0	N/A	
995C04PBP-N021	3	1.5	N/A	
995C04PBP-N022	3	1.5	N/A	
995C04PBP-N023	3	0.0	N/A	
995C04PBP-N024	3	0.0	N/A	
995C04PBP-N025	3	3.0	N/A	

Comments:

Survey Area: 5	Survey Unit: 995C04	Building: 995
Description: 995-C-4 Clarifier Basin (Interior)		

Random/QC Total Surface Activity Data Sheet

Random Measurement Location	Inst / RCT Nbr	Net Alpha (dpm/100cm²)	Net Beta (dpm/100cm²)	
995C04PRP-N001	1	29.9	N/A	
995C04PRP-N002	1	82.3	N/A	
995C04PRP-N003	1	83.7	N/A	
995C04PRP-N004	1	96.5	N/A	
995C04PRP-N005	1	74.2	N/A	
995C04PRP-N006	1	88.4	N/A	
995C04QRP-N006	2	74.9	N/A	
995C04PRP-N007	1	75.6	N/A	
995C04PRP-N008	1	28.0	N/A	
995C04PRP-N009	1	23.2	N/A	
995C04PRP-N010	1	50.4	N/A	
995C04PRP-N011	1	20.4	N/A	
995C04PRP-N012	1	78.9	N/A	
995C04PRP-N013	1	48.9	N/A	
995C04PRP-N014	1	87.0	N/A	
995C04QRP-N014	2	82.9	N/A	
995C04PRP-N015	1	59.9	N/A	

Survey Area: 5	Survey Unit: 995C04	Building: 995
Description: 995-C-4 Clarifier Basin (Interior)		

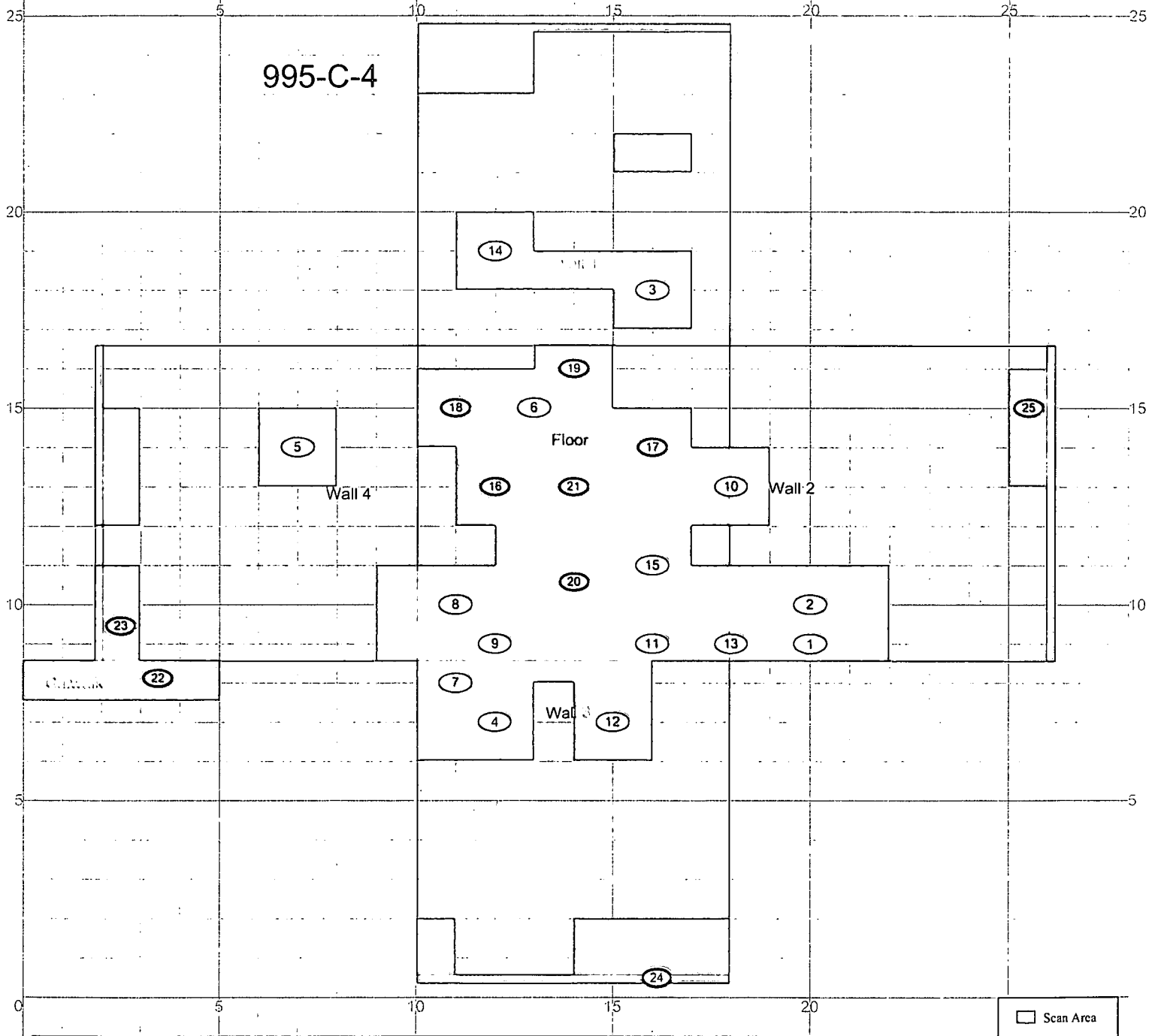
Biased Total Surface Activity Data Sheet

Biased Measurement Location	Inst / RCT Nbr	Net Alpha (dpm/100cm²)	Net Beta (dpm/100cm²)	
995C04PBP-N016	1	61.6	N/A	
995C04PBP-N017	1	30.2	N/A	
995C04PBP-N018	1	52.1	N/A	
995C04PBP-N019	1	39.7	N/A	
995C04PBP-N020	1	33.0	N/A	
995C04PBP-N021	1	26.8	N/A	
995C04PBP-N022	1	20.7	N/A	
995C04PBP-N023	1	26.8	N/A	
995C04PBP-N024	1	52.1	N/A	
995C04PBP-N025	1	84.0	N/A	

Comments:

RLC/PDS FOR THE SEWAGE TREATMENT PLANT

Survey Area: 5 **Survey Unit: 995C04** **Classification: 3**
Building: 995-C-4
Survey Unit Description: 995-C-4 Clarifer Basin (Interior)
Total Area: 172 sq. m. **Floor Area: 64 sq. m.**



SURVEY MAP LEGEND

- Smear & TSA Location
- Smear, TSA & Sample Location
- Open/Inaccessible Area
- Area in Another Survey Unit

N

0 FEET 15
0 METERS 5

1 inch = 12 feet 1 grid sq. = 1 sq. m.

Scan Area

Scan Survey Information
Survey Instrument ID #(s) & RCT ID #(s):
1, 2

U.S. Department of Energy
Rocky Flats Environmental Technology Site

Prepared by: GIS Dept. 303-966-7707 **Prepared for:**

CH2MHILL Communications Group

KAISER-HILL COMPANY

MAP ID: 03-0226\995-C-4_SC **Dec. 6, 2004**

126

Survey Area: 5	Survey Unit: 995C05	Building: 995-C-5

Description: 995-C-5 Clarifier All Surfaces

Rocky Flats Environmental Technology Site
Final Radiological Survey Summary Results

Total Surface Activity Measurements

Nbr Random Measurements Required: 15 | Nbr Biased Measurements Required: 0 | Nbr QC Required: 2

Nbr Random Measurements Performed: 15 | Nbr Biased Measurements Performed: 5 | Nbr QC Performed: 2

Alpha

Maximum:	82.4 dpm/100cm²
Minimum:	-5.7 dpm/100cm²
Mean:	23.6 dpm/100cm²
Standard Deviation:	23.0
QC Maximum:	66.0 dpm/100cm²
QC Minimum:	62.7 dpm/100cm²
QC Mean:	64.4 dpm/100cm²
Transuranic DCGLw:	100.0 dpm/100cm²
Transuranic DCGLemc:	300.0 dpm/100cm²

Removable Surface Activity Measurements

Nbr Random Measurements Required: 15 | Nbr Biased Measurements Required: 0

Nbr Random Measurements Performed: 15 | Nbr Biased Measurements Performed: 5

Alpha

Maximum:	1.2 dpm/100cm²
Minimum:	-1.8 dpm/100cm²
Mean:	-0.8 dpm/100cm²
Standard Deviation:	1.0
Transuranic DCGLw:	20.0 dpm/100cm²

Media Sample Results

Nbr Random Required: 0 | Nbr Biased Required: 0

Nbr Random Collected: 0 | Nbr Biased Collected: 0

Conclusion - A comparison of the random, biased and QC measurement results against the PDSP Table 7-1 Surface Contamination Guideline limits was conducted; the comparison demonstrates that this survey unit passes the criterion specified in the PDSP.

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Survey Area: 5	Survey Unit: 995C05	Building: 995-C-5
Description: 995-C-5 Clarifier All Surfaces		

Instrument Data Sheet

Inst/RCT Number	RCT ID	Analysis Date	Instr Model	Instru S/N	Probe Type	Calibration Due Dt	Instru Efficiency		A-Priori MDA (dpm/100cm²)		Survey Type
							Alpha	Beta	Alpha	Beta	
1	711447	11/17/04	Electra	3104	DP-6	03/17/05	0.210	NA	48.0	NA	T/S
2	700831	11/17/04	Electra	1665	DP-6	04/07/05	0.213	NA	48.0	NA	T/S
3	511390	11/17/04	Electra	1665	DP-6	04/07/05	0.213	NA	48.0	NA	Q
4	511390	11/18/04	SAC-4	924	NA	02/04/05	0.330	NA	48.0	NA	R
5	511390	11/18/04	SAC-4	952	NA	02/12/05	0.330	NA	48.0	NA	R

Survey Types: T = Total Surface Activity, Q = TSA QC, S = Scan, R = Removable Surface Activity, I = Investigation

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Survey Area: 5	Survey Unit: 995C05	Building: 995-C-5

Description: 995-C-5 Clarifier All Surfaces

Random Removable Surface Activity Data Sheet

Random Measurement Location	Inst / RCT Nbr	Net Alpha (dpm/100cm²)	Net Beta (dpm/100cm²)	
995C05PRP-N001	4	1.2	N/A	
995C05PRP-N002	5	0.9	N/A	
995C05PRP-N003	4	-1.8	N/A	
995C05PRP-N004	5	-0.6	N/A	
995C05PRP-N005	4	-1.8	N/A	
995C05PRP-N006	5	-0.6	N/A	
995C05PRP-N007	4	-1.8	N/A	
995C05PRP-N008	5	-0.6	N/A	
995C05PRP-N009	4	-1.8	N/A	
995C05PRP-N010	5	-0.6	N/A	
995C05PRP-N011	4	-1.8	N/A	
995C05PRP-N012	5	-0.6	N/A	
995C05PRP-N013	4	-1.8	N/A	
995C05PRP-N014	5	-0.6	N/A	
995C05PRP-N015	4	-1.8	N/A	

Survey Area: 5	Survey Unit: 995C05	Building: 995-C-5

Description: 995-C-5 Clarifier All Surfaces

Biased Removable Surface Activity Data Sheet

Biased Measurement Location	Inst / RCT Nbr	Net Alpha (dpm/100cm²)	Net Beta (dpm/100cm²)	
995C05PBP-N016	5	-0.6	N/A	
995C05PBP-N017	4	1.2	N/A	
995C05PBP-N018	5	-0.6	N/A	
995C05PBP-N019	4	-1.8	N/A	
995C05PBP-N020	5	-0.6	N/A	

Comments:

130

Survey Area: 5	Survey Unit: 995C05	Building: 995-C-5
Description: 995-C-5 Clarifier All Surfaces		

Random/QC Total Surface Activity Data Sheet

Random Measurement Location	Inst / RCT Nbr	Net Alpha (dpm/100cm²)	Net Beta (dpm/100cm²)	
995C05PRP-N001	1	44.3	N/A	
995C05PRP-N002	2	27.4	N/A	
995C05PRP-N003	2	2.5	N/A	
995C05PRP-N004	1	82.4	N/A	
995C05QRP-N004	3	62.7	N/A	
995C05PRP-N005	2	15.1	N/A	
995C05PRP-N006	2	30.6	N/A	
995C05PRP-N007	2	11.9	N/A	
995C05PRP-N008	1	28.1	N/A	
995C05PRP-N009	2	2.5	N/A	
995C05PRP-N010	2	11.9	N/A	
995C05PRP-N011	2	5.8	N/A	
995C05PRP-N012	1	69.5	N/A	
995C05QRP-N012	3	66.0	N/A	
995C05PRP-N013	1	44.3	N/A	
995C05PRP-N014	2	21.2	N/A	
995C05PRP-N015	2	-3.6	N/A	

Survey Area: 5	Survey Unit: 995C05	Building: 995-C-5
Description: 995-C-5 Clarifier All Surfaces		

Biased Total Surface Activity Data Sheet

Biased Measurement Location	Inst / RCT Nbr	Net Alpha (dpm/100cm²)	Net Beta (dpm/100cm²)	
995C05PBP-N016	1	26.0	N/A	
995C05PBP-N017	1	29.3	N/A	
995C05PBP-N018	2	6.5	N/A	
995C05PBP-N019	2	-5.7	N/A	
995C05PBP-N020	2	22.4	N/A	

Comments:

Printed On: 12/08/04 08:31

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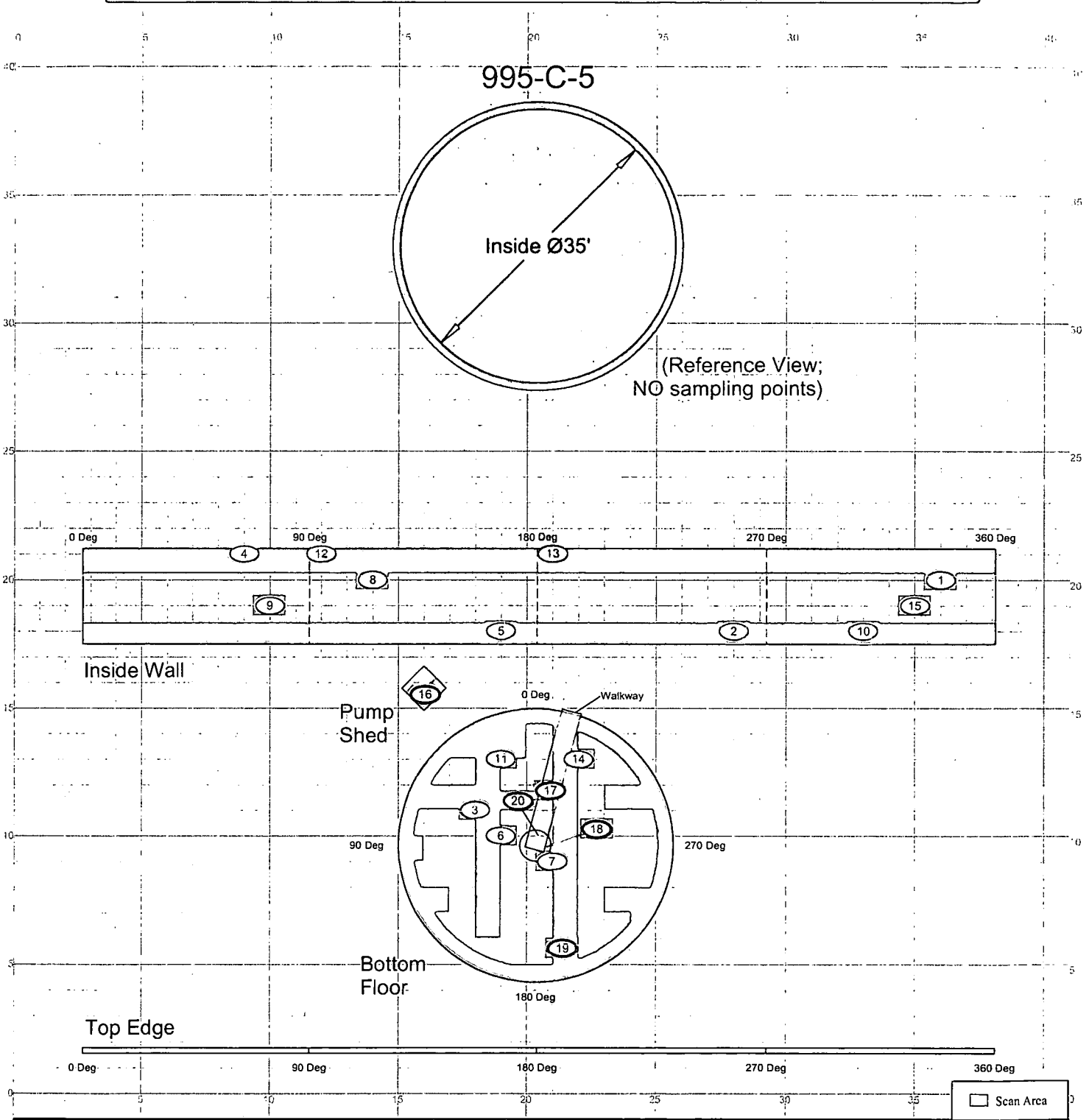
RLC/PDS FOR THE SEWAGE TREATMENT PLANT

Survey Area: 5 Survey Unit: 995C05 Classification: 3
Building: 995-C-5
Survey Unit Description: 995-C-5 Clarifier Basin, All Surfaces
Total Area: 234 sq. m. Floor Area: 124 sq. m.



SURVEY MAP LEGEND

- Smear & TSA Location
- Smear, TSA & Sample Location
- Open/Inaccessible Area
- Area Shown in Another View

N

0 FEET 25
0 METERS 8

1 inch = 18 feet 1 grid sq. = 1 sq. m.

Scan Survey Information
Survey Instrument ID #(s) & RCT ID #(s):
1, 2

U.S. Department of Energy
Rocky Flats Environmental Technology Site

Prepared by: GIS Dept. 303-966-7707

CH2MHILL
Communications Group

KAISER-HILL COMPANY

MAP ID: 03-0226\995-C-5_SC Nov. 22, 2004

133

Survey Area: 5	Survey Unit: 9953IC	Building: 995 IC1-IC2-IC3
Description: 995 Influent Cells 1, 2 & 3 (Interior and Exterior)		

Rocky Flats Environmental Technology Site
Final Radiological Survey Summary Results

Total Surface Activity Measurements

Nbr Random Measurements Required: 15 | Nbr Biased Measurements Required: 0 | Nbr QC Required: 2

Nbr Random Measurements Performed: 30 | Nbr Biased Measurements Performed: 5 | Nbr QC Performed: 2

Alpha

Maximum:	88.9 dpm/100cm²
Minimum:	-12.5 dpm/100cm²
Mean:	40.3 dpm/100cm²
Standard Deviation:	28.3
QC Maximum:	37.4 dpm/100cm²
QC Minimum:	36.0 dpm/100cm²
QC Mean:	36.7 dpm/100cm²
Transuranic DCGL$_W$:	100.0 dpm/100cm²
Transuranic DCGL$_{EMC}$:	300.0 dpm/100cm²

Removable Surface Activity Measurements

Nbr Random Measurements Required: 15 | Nbr Biased Measurements Required: 0

Nbr Random Measurements Performed: 30 | Nbr Biased Measurements Performed: 5

Alpha

Maximum:	5.5 dpm/100cm²
Minimum:	-0.6 dpm/100cm²
Mean:	0.9 dpm/100cm²
Standard Deviation:	1.4
Transuranic DCGL$_W$:	20.0 dpm/100cm²

Media Sample Results

Nbr Random Required: 0 | Nbr Biased Required: 0

Nbr Random Collected: 0 | Nbr Biased Collected: 0

Conclusion - A comparison of the random, biased and QC measurement results against the PDSP Table 7-1 Surface Contamination Guideline limits was conducted; the comparison demonstrates that this survey unit passes the criterion specified in the PDSP.

Survey Area: 5	Survey Unit: 9953IC	Building: 995 IC1-IC2-IC3

Description: 995 Influent Cells 1, 2 & 3 (Interior and Exterior)

Instrument Data Sheet

Inst/RCT Number	RCT ID	Analysis Date	Instr Model	Instru S/N	Probe Type	Calibration Due Dt	Instru Efficiency		A-Priori MDA (dpm/100cm²)		Survey Type
							Alpha	Beta	Alpha	Beta	
1	711447	11/15/04	Electra	3251	DP-6	01/07/05	0.218	NA	48.0	NA	Q/S
2	712193	11/15/04	Electra	3104	DP-6	03/17/05	0.210	NA	48.0	NA	T/I/S
3	511390	11/18/04	SAC-4	924	NA	02/04/05	0.330	NA	10.0	NA	R
4	511390	11/18/04	SAC-4	952	NA	02/12/05	0.330	NA	10.0	NA	R

Survey Types: T = Total Surface Activity, Q = TSA QC, S = Scan, R = Removable Surface Activity, I = Investigation

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Survey Area: 5	Survey Unit: 9953IC	Building: 995 IC1-IC2-IC3
Description: 995 Influent Cells 1, 2 & 3 (Interior and Exterior)		

Random Removable Surface Activity Data Sheet

Random Measurement Location	Inst / RCT Nbr	Net Alpha (dpm/100cm²)	Net Beta (dpm/100cm²)	
9953ICPRP-N001	3	-0.6	N/A	
9953ICPRP-N002	4	2.7	N/A	
9953ICPRP-N003	3	0.9	N/A	
9953ICPRP-N004	4	-0.3	N/A	
9953ICPRP-N005	3	2.4	N/A	
9953ICPRP-N006	4	1.2	N/A	
9953ICPRP-N007	3	0.9	N/A	
9953ICPRP-N008	4	2.7	N/A	
9953ICPRP-N009	3	-0.6	N/A	
9953ICPRP-N010	4	1.2	N/A	
9953ICPRP-N011	3	2.4	N/A	
9953ICPRP-N012	4	-0.3	N/A	
9953ICPRP-N013	3	2.4	N/A	
9953ICPRP-N014	4	-0.3	N/A	
9953ICPRP-N015	3	-0.6	N/A	
9953ICPRP-N016	4	-0.3	N/A	
9953ICPRP-N017	3	2.4	N/A	
9953ICPRP-N018	4	1.2	N/A	
9953ICPRP-N019	3	0.9	N/A	
9953ICPRP-N020	4	-0.3	N/A	
9953ICPRP-N021	3	0.9	N/A	
9953ICPRP-N022	4	1.2	N/A	
9953ICPRP-N023	3	-0.6	N/A	
9953ICPRP-N024	4	1.2	N/A	
9953ICPRP-N025	3	-0.6	N/A	
9953ICPRP-N026	4	1.2	N/A	
9953ICPRP-N027	3	2.4	N/A	
9953ICPRP-N028	4	2.7	N/A	
9953ICPRP-N029	3	0.9	N/A	

Survey Area: 5	Survey Unit: 9953IC	Building: 995 IC1-IC2-IC3

Description: 995 Influent Cells 1, 2 & 3 (Interior and Exterior)

Random Removable Surface Activity Data Sheet

Random Measurement Location	Inst / RCT Nbr	Net Alpha (dpm/100cm²)	Net Beta (dpm/100cm²)	
9953ICPRP-N030	4	1.2	N/A	

Biased Removable Surface Activity Data Sheet

Biased Measurement Location	Inst / RCT Nbr	Net Alpha (dpm/100cm²)	Net Beta (dpm/100cm²)	
9953ICPBP-N031	3	5.5	N/A	
9953ICPBP-N032	4	-0.3	N/A	
9953ICPBP-N033	3	-0.6	N/A	
9953ICPBP-N034	4	-0.3	N/A	
9953ICPBP-N035	3	-0.6	N/A	

Comments:

Survey Area: 5	Survey Unit: 9953IC	Building: 995 IC1 IC2 IC3
Description: 995 Influent Cells 1, 2 & 3 (Interior and Exterior)		

Random/QC Total Surface Activity Data Sheet

Random Measurement Location	Inst / RCT Nbr	Net Alpha (dpm/100cm²)	Net Beta (dpm/100cm²)	
9953ICPRP-N001	2	22.2	N/A	
9953ICIRP-N002	2	79.5	N/A	
9953ICPRP-N003	2	35.1	N/A	
9953ICPRP-N004	2	37.9	N/A	
9953ICPRP-N005	2	41.3	N/A	
9953ICQRP-N006	1	37.4	N/A	
9953ICPRP-N006	2	63.6	N/A	
9953ICPRP-N007	2	35.1	N/A	
9953ICPRP-N008	2	88.9	N/A	
9953ICPRP-N009	2	9.4	N/A	
9953ICPRP-N010	2	41.3	N/A	
9953ICPRP-N011	2	9.4	N/A	
9953ICPRP-N012	2	22.2	N/A	
9953ICQRP-N013	1	36.0	N/A	
9953ICPRP-N013	2	54.1	N/A	
9953ICPRP-N014	2	25.6	N/A	
9953ICPRP-N015	2	16.0	N/A	
9953ICPRP-N016	2	9.4	N/A	
9953ICPRP-N017	2	66.5	N/A	
9953ICIRP-N018	2	85.7	N/A	
9953ICPRP-N019	2	57.0	N/A	
9953ICPRP-N020	2	18.9	N/A	
9953ICPRP-N021	2	35.1	N/A	
9953ICPRP-N022	2	63.6	N/A	
9953ICPRP-N023	2	47.5	N/A	
9953ICPRP-N024	2	42.7	N/A	
9953ICPRP-N025	2	35.1	N/A	

Survey Area: 5	Survey Unit: 9953IC	Building: 995 IC1-IC2-IC3
Description: 995 Influent Cells 1, 2 & 3 (Interior and Exterior)		

Random/QC Total Surface Activity Data Sheet

Random Measurement Location	Inst / RCT Nbr	Net Alpha (dpm/100cm²)	Net Beta (dpm/100cm²)	
9953ICPRP-N026	2	9.4	N/A	
9953ICPRP-N027	2	79.4	N/A	
9953ICPRP-N028	2	66.5	N/A	
9953ICPRP-N029	2	25.6	N/A	
9953ICPRP-N030	2	88.9	N/A	

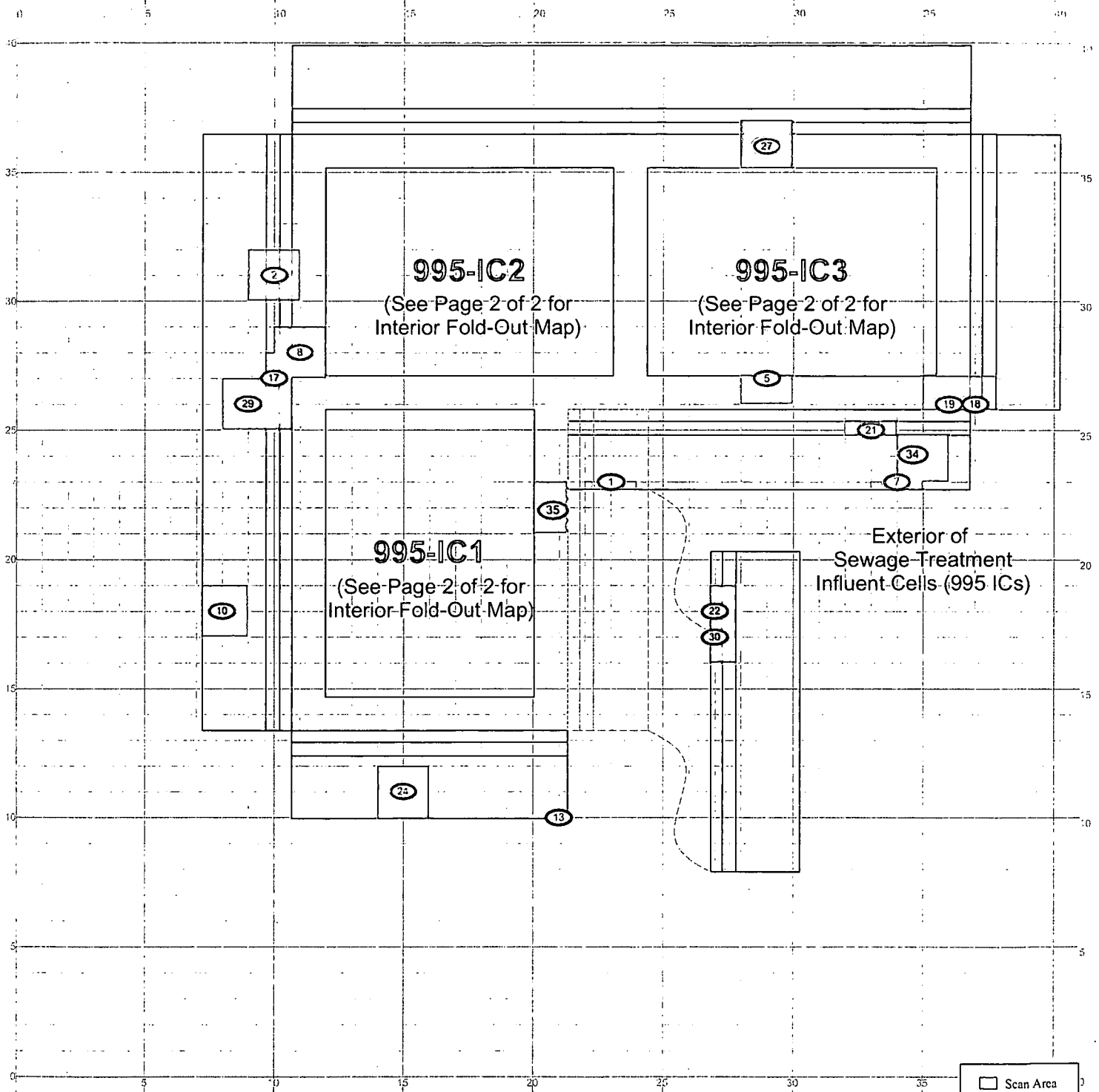
Biased Total Surface Activity Data Sheet

Biased Measurement Location	Inst / RCT Nbr	Net Alpha (dpm/100cm²)	Net Beta (dpm/100cm²)	
9953ICPBP-N031	2	-12.5	N/A	
9953ICPBP-N032	2	-9.2	N/A	
9953ICPBP-N033	2	-1.1	N/A	
9953ICPBP-N034	2	76.6	N/A	
9953ICPBP-N035	2	44.7	N/A	

Comments: The initial sample net activity for locations 2 and 18 was 120.8 and 155.6 dpm/100cm2 respectively. These locations were sealed, allowed to decay, and re-surveyed. Re-survey results are reported. No further investigation is required.

RLC/PDS FOR THE SEWAGE TREATMENT PLANT

Survey Area: 5 **Survey Unit: 9953IC** **Classification: 3**
Building: 995 IC1, IC2 & IC3
Survey Unit Description: 995 Influent Cells 1 ,2 & 3, (Interior & Exterior)
Total Area: 1,408 sq. m. **Total Floor Area: 270 sq. m.**



Scan Area

SURVEY MAP LEGEND

- Smear & TSA Location
- Smear, TSA & Sample Location
- Open/Inaccessible Area
- Area in Another Survey Unit

N

0 FEET 25
0 METERS 8

1 inch = 18 feet 1 grid sq. = 1 sq. m.

Scan Survey Information
Survey Instrument ID #(s) & RCT ID #(s):
1, 2

U.S. Department of Energy
Rocky Flats Environmental Technology Site

Prepared by: GIS Dept. 303-966-7707 Prepared for:

CH2MHILL Communications Group

MAP ID: 03-0226/995-ICs_Pg1_SC Dec. 1, 2004

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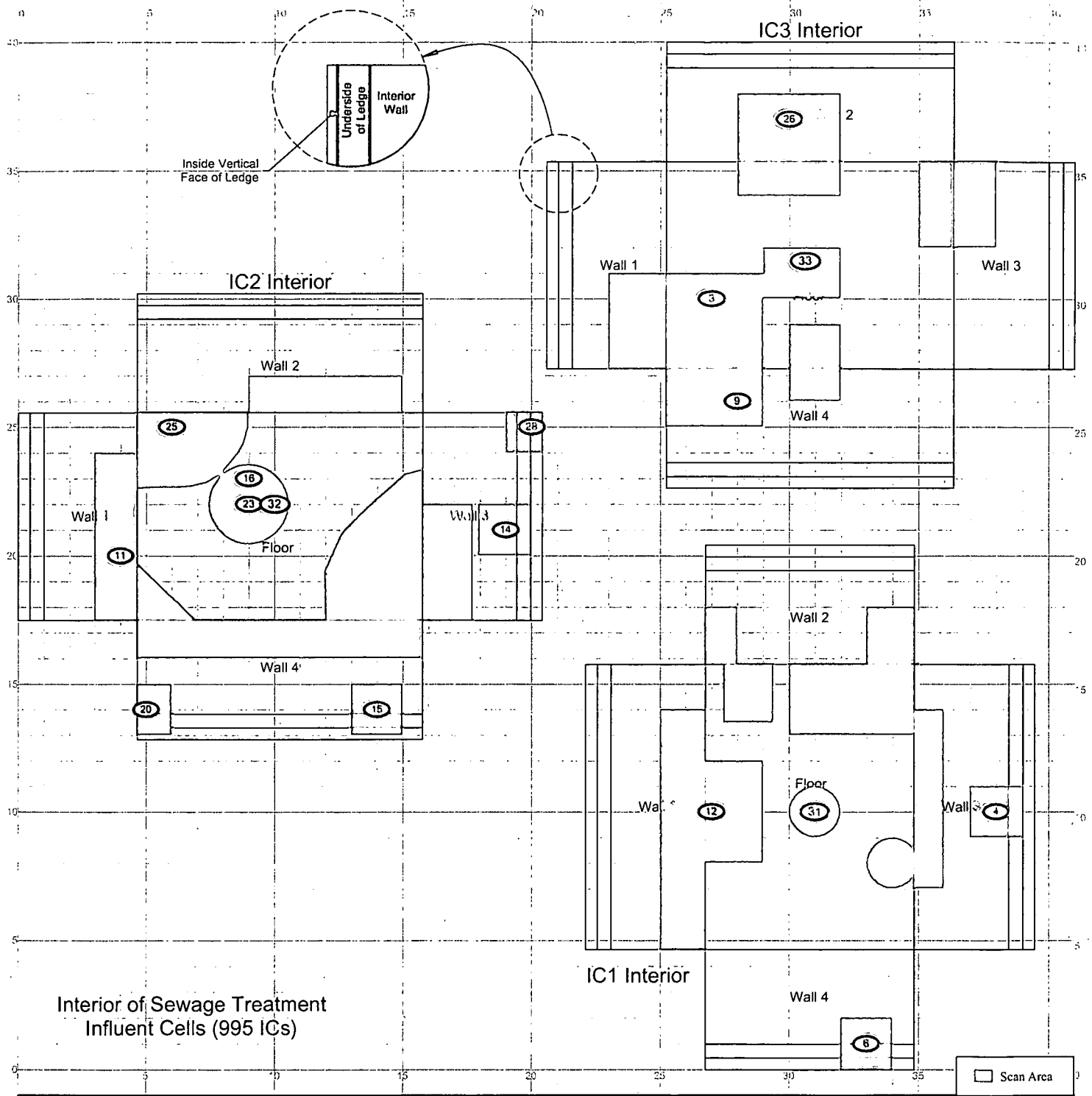
RLC/PDS FOR THE SEWAGE TREATMENT PLANT

Survey Area: 5 **Survey Unit: 9953IC** **Classification: 3**
Building: 995 IC1, IC2 & IC3
Survey Unit Description: 995 Influent Cells 1 ,2 & 3, (Interior & Exterior)
Total Area: 1,408 sq. m. **Total Floor Area: 270 sq. m.**



SURVEY MAP LEGEND

- Smear & TSA Location
- Smear, TSA & Sample Location
- Open/Inaccessible Area
- Area Shown in Another View

N

0 FEET 25
0 METERS 8

1 inch = 18 feet 1 grid sq. = 1 sq. m.

Scan Survey Information
Survey Instrument ID #(s) & RCT ID #(s):
1, 2

U.S. Department of Energy
Rocky Flats Environmental Technology Site

Prepared by: GIS Dept. 303-966-7707 Prepared for:

CH2MHILL Communications Group

KAISER-HILL COMPANY

MAP ID: 03-0226/995-ICs_PG2_SC Dec. 1, 2004

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Survey Area: 5	Survey Unit: 995MST	Building: 995

Description: Building 995 Miscellaneous Structures (above ground pipes, supports and equipment)

Rocky Flats Environmental Technology Site
Final Radiological Survey Summary Results

Total Surface Activity Measurements

Nbr Random Measurements Required: 15 | Nbr Biased Measurements Required: 0 | Nbr QC Required: 2

Nbr Random Measurements Performed: 15 | Nbr Biased Measurements Performed: 35 | Nbr QC Performed: 2

Alpha

Maximum:	60.1 dpm/100cm²
Minimum:	-7.2 dpm/100cm²
Mean:	32.0 dpm/100cm²
Standard Deviation:	17.6
QC Maximum:	46.9 dpm/100cm²
QC Minimum:	36.6 dpm/100cm²
QC Mean:	41.7 dpm/100cm²
Transuranic $DCGL_W$:	100.0 dpm/100cm²
Transuranic $DCGL_{EMC}$:	300.0 dpm/100cm²

Removable Surface Activity Measurements

Nbr Random Measurements Required: 15 | Nbr Biased Measurements Required: 0

Nbr Random Measurements Performed: 15 | Nbr Biased Measurements Performed: 35

Alpha

Maximum:	3.0 dpm/100cm²
Minimum:	-0.3 dpm/100cm²
Mean:	0.2 dpm/100cm²
Standard Deviation:	0.8
Transuranic $DCGL_W$:	20.0 dpm/100cm²

Media Sample Results

Nbr Random Required: 0 | Nbr Biased Required: 0

Nbr Random Collected: 0 | Nbr Biased Collected: 0

Conclusion - A comparison of the random, biased and QC measurement results against the PDSP Table 7-1 Surface Contamination Guideline limits was conducted; the comparison demonstrates that this survey unit passes the criterion specified in the PDSP.

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Survey Area: 5	Survey Unit: 995MST	Building: 995

Description: Building 995 Miscellaneous Structures (above ground pipes, supports and equipment)

Instrument Data Sheet

Inst/RCT Number	RCT ID	Analysis Date	Instr Model	Instru S/N	Probe Type	Calibration Due Dt	Instru Efficiency		A-Priori MDA (dpm/100cm²)		Survey Type
							Alpha	Beta	Alpha	Beta	
1	712193	11/19/04	Electra	1379	DP-6	05/09/05	0.223	NA	48.0	NA	T/S
2	700831	11/19/04	Electra	1415	DP-6	04/21/05	0.224	NA	48.0	NA	T/Q/S
3	700831	11/22/04	SAC-4	924	NA	02/04/05	0.330	NA	10.0	NA	R
4	700831	11/22/04	SAC-4	952	NA	02/12/05	0.330	NA	10.0	NA	R

Survey Types: T = Total Surface Activity, Q = TSA QC, S = Scan, R = Removable Surface Activity, I = Investigation

Survey Area: 5	Survey Unit: 995MST	Building: 995
Description: Building 995 Miscellaneous Structures (above ground pipes, supports and equipment)		

Random Removable Surface Activity Data Sheet

Random Measurement Location	Inst / RCT Nbr	Net Alpha (dpm/100cm²)	Net Beta (dpm/100cm²)	
995MSTPRP-N001	3	1.5	N/A	
995MSTPRP-N002	4	1.2	N/A	
995MSTPRP-N003	3	0.0	N/A	
995MSTPRP-N004	4	1.2	N/A	
995MSTPRP-N005	3	0.0	N/A	
995MSTPRP-N006	4	1.2	N/A	
995MSTPRP-N007	3	1.5	N/A	
995MSTPRP-N008	4	1.2	N/A	
995MSTPRP-N009	3	1.5	N/A	
995MSTPRP-N010	4	-0.3	N/A	
995MSTPRP-N011	3	0.0	N/A	
995MSTPRP-N012	4	-0.3	N/A	
995MSTPRP-N013	3	1.5	N/A	
995MSTPRP-N014	4	1.2	N/A	
995MSTPRP-N015	3	0.0	N/A	

Survey Area: 5	Survey Unit: 995MST	Building: 995

Description: Building 995 Miscellaneous Structures (above ground pipes, supports and equipment)

Biased Removable Surface Activity Data Sheet

Biased Measurement Location	Inst / RCT Nbr	Net Alpha (dpm/100cm²)	Net Beta (dpm/100cm²)	
995MSTPBP-N016	4	-0.3	N/A	
995MSTPBP-N017	3	1.5	N/A	
995MSTPBP-N018	4	-0.3	N/A	
995MSTPBP-N019	3	0.0	N/A	
995MSTPBP-N020	4	-0.3	N/A	
995MSTPBP-N021	3	0.0	N/A	
995MSTPBP-N022	4	-0.3	N/A	
995MSTPBP-N023	3	1.5	N/A	
995MSTPBP-N024	4	-0.3	N/A	
995MSTPBP-N025	3	0.0	N/A	
995MSTPBP-N026	4	-0.3	N/A	
995MSTPBP-N027	3	0.0	N/A	
995MSTPBP-N028	4	-0.3	N/A	
995MSTPBP-N029	3	0.0	N/A	
995MSTPBP-N030	4	-0.3	N/A	
995MSTPBP-N031	3	0.0	N/A	
995MSTPBP-N032	4	-0.3	N/A	
995MSTPBP-N033	3	0.0	N/A	
995MSTPBP-N034	4	-0.3	N/A	
995MSTPBP-N035	3	0.0	N/A	
995MSTPBP-N036	4	-0.3	N/A	
995MSTPBP-N037	3	3.0	N/A	
995MSTPBP-N038	4	-0.3	N/A	
995MSTPBP-N039	3	0.0	N/A	
995MSTPBP-N040	4	-0.3	N/A	
995MSTPBP-N041	3	0.0	N/A	
995MSTPBP-N042	4	-0.3	N/A	

Survey Area: 5	Survey Unit: 995MST	Building: 995
Description: Building 995 Miscellaneous Structures (above ground pipes, supports and equipment)		

Biased Removable Surface Activity Data Sheet

Biased Measurement Location	Inst / RCT Nbr	Net Alpha (dpm/100cm²)	Net Beta (dpm/100cm²)	
995MSTPBP-N043	3	0.0	N/A	
995MSTPBP-N044	4	-0.3	N/A	
995MSTPBP-N045	3	0.0	N/A	
995MSTPBP-N046	4	-0.3	N/A	
995MSTPBP-N047	3	0.0	N/A	
995MSTPBP-N048	4	-0.3	N/A	
995MSTPBP-N049	3	0.0	N/A	
995MSTPBP-N050	4	-0.3	N/A	

Comments:

Survey Area: 5	Survey Unit: 995MST	Building: 995

Description: Building 995 Miscellaneous Structures (above ground pipes, supports and equipment)

Random/QC Total Surface Activity Data Sheet

Random Measurement Location	Inst / RCT Nbr	Net Alpha (dpm/100cm²)	Net Beta (dpm/100cm²)	
995MSTPRP-N001	1	38.9	N/A	
995MSTPRP-N002	1	22.8	N/A	
995MSTPRP-N003	1	40.7	N/A	
995MSTQRP-N003	2	36.6	N/A	
995MSTPRP-N004	1	49.7	N/A	
995MSTPRP-N005	1	7.6	N/A	
995MSTPRP-N006	1	9.3	N/A	
995MSTPRP-N007	1	28.6	N/A	
995MSTPRP-N008	1	4.9	N/A	
995MSTPRP-N009	1	21.0	N/A	
995MSTPRP-N010	1	13.8	N/A	
995MSTPRP-N011	1	27.3	N/A	
995MSTPRP-N012	1	-2.8	N/A	
995MSTPRP-N013	1	19.7	N/A	
995MSTPRP-N014	1	58.7	N/A	
995MSTQRP-N014	2	46.9	N/A	
995MSTPRP-N015	1	3.1	N/A	

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Survey Area: 5	Survey Unit: 995MST	Building: 995

Description: Building 995 Miscellaneous Structures (above ground pipes, supports and equipment)

Biased Total Surface Activity Data Sheet

Biased Measurement Location	Inst / RCT Nbr	Net Alpha (dpm/100cm²)	Net Beta (dpm/100cm²)	
995MSTPBP-N016	1	58.8	N/A	
995MSTPBP-N017	1	21.1	N/A	
995MSTPBP-N018	1	34.5	N/A	
995MSTPBP-N019	1	39.0	N/A	
995MSTPBP-N020	1	22.9	N/A	
995MSTPBP-N021	1	31.9	N/A	
995MSTPBP-N022	1	40.8	N/A	
995MSTPBP-N023	1	42.2	N/A	
995MSTPBP-N024	1	34.5	N/A	
995MSTPBP-N025	1	42.2	N/A	
995MSTPBP-N026	1	34.5	N/A	
995MSTPBP-N027	1	48.0	N/A	
995MSTPBP-N028	1	52.5	N/A	
995MSTPBP-N029	1	55.6	N/A	
995MSTPBP-N030	1	28.7	N/A	
995MSTPBP-N031	1	31.9	N/A	
995MSTPBP-N032	1	57.0	N/A	
995MSTPBP-N033	1	55.6	N/A	
995MSTPBP-N034	1	12.1	N/A	
995MSTPBP-N035	1	-7.2	N/A	
995MSTPBP-N036	1	28.7	N/A	
995MSTPBP-N037	1	15.3	N/A	
995MSTPBP-N038	1	52.5	N/A	
995MSTPBP-N039	1	4.9	N/A	
995MSTPBP-N040	1	34.5	N/A	
995MSTPBP-N041	1	60.1	N/A	
995MSTPBP-N042	1	48.0	N/A	

Survey Area: 5	Survey Unit: 995MST	Building: 995

Description: Building 995 Miscellaneous Structures (above ground pipes, supports and equipment)

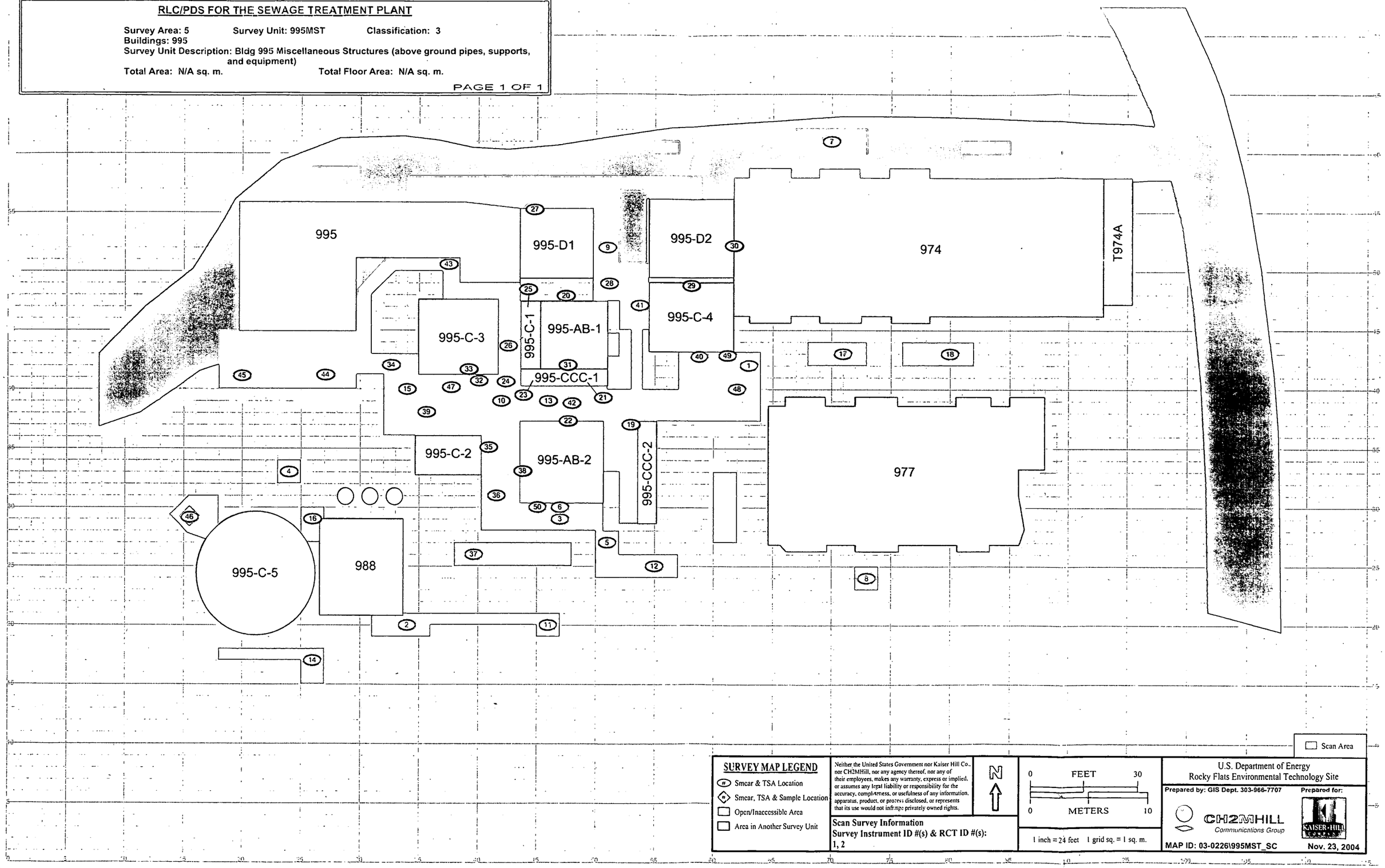
Biased Total Surface Activity Data Sheet

Biased Measurement Location	Inst / RCT Nbr	Net Alpha (dpm/100cm²)	Net Beta (dpm/100cm²)	
995MSTPBP-N043	1	18.4	N/A	
995MSTPBP-N044	1	55.6	N/A	
995MSTPBP-N045	1	34.5	N/A	
995MSTPBP-N046	1	28.7	N/A	
995MSTPBP-N047	1	22.9	N/A	
995MSTPBP-N048	1	28.7	N/A	
995MSTPBP-N049	1	51.1	N/A	
995MSTPBP-N050	1	34.5	N/A	

Comments:

RLC/PDS FOR THE SEWAGE TREATMENT PLANT

Survey Area: 5 **Survey Unit:** 995MST **Classification:** 3
Buildings: 995
Survey Unit Description: Bldg 995 Miscellaneous Structures (above ground pipes, supports, and equipment)
Total Area: N/A sq. m. **Total Floor Area:** N/A sq. m.



SURVEY MAP LEGEND

- Smear & TSA Location
- Smear, TSA & Sample Location
- Open/Inaccessible Area
- Area in Another Survey Unit

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N

0 FEET 30
0 METERS 10
1 inch = 24 feet 1 grid sq. = 1 sq. m.

Scan Area

Scan Survey Information
Survey Instrument ID #(s) & RCT ID #(s):
1, 2

U.S. Department of Energy
Rocky Flats Environmental Technology Site

Prepared by: GIS Dept. 303-966-7707 Prepared for:

CH2MHILL Communications Group

KAISER-HILL COMPANY

MAP ID: 03-0226\995MST_SC Nov. 23, 2004

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ATTACHMENT D

Chemical Data Summaries and Sample Maps

Asbestos Data Summary

Sample Number	Map Survey Location	Room	Material Sampled and Location	Analytical Results
Building 995 - RIN 03Z1881				
995-06122003-315-201	1	Storage	12" beige and tan vinyl floor tile with yellow adhesive	None Detected
995-06122003-315-202	2	Hall 2	12" beige and white vinyl floor tile with yellow adhesive	None Detected
995-06122003-315-203	3	Hall 3	White paint on CMU, west wall	None Detected
995-06122003-315-204	4	Hall 2	White paint on CMU, east wall	None Detected
995-06122003-315-205	5	Lab 2	Beige paint on CMU, south wall (Lab 2)	None Detected
995-06122003-315-206	6	Hall 3	2' x 4' WADCT	None Detected
995-06122003-315-207	7	Hall 1	Joint compound only	None Detected
995-06122003-315-208	8	Hall 1	Drywall only	None Detected
995-06122003-315-209	9	107	Blue and white sheet vinyl linoleum (Lab 1)	None Detected
Building 995 - RIN 05Z0148				
995-10112004-314-001	10	Roof	Black fibrous tar	**20 % Chrysotile**
995-10112004-314-002	11	Window	White fibrous plaster	None Detected
Building 995 – RIN 04Z0330				
995-11102003-9-001	12	Hall 2	Drywall and Mud	None Detected
995-11102003-9-002	13	107	Linoleum Floor & mastic	None Detected
995-11102003-9-003	14	102	Floor tile and mastic	None Detected
995-11102003-9-004	15	101	Ceiling tile	None Detected
995-11102003-9-005	16	Hall 2	Skim coat	None Detected
995-11102003-9-006	17	100	Floor tile	None Detected
995-11102003-9-007	18	100	Skim coat	None Detected
Building 988A – RIN 04Z0330				
995-11102003-9-008	1	Main	Skim Coat of east wall of 988A	None Detected
Building 988 – RIN 03Z1881				
988-06122003-315-201	1	Main	White paint on CMU, east wall	None Detected
988-06122003-315-202	2	Main	White paint on CMU, north wall	None Detected
988-06122003-315-203	3	Exterior	Beige & white paint on CMU, exterior east wall	None Detected

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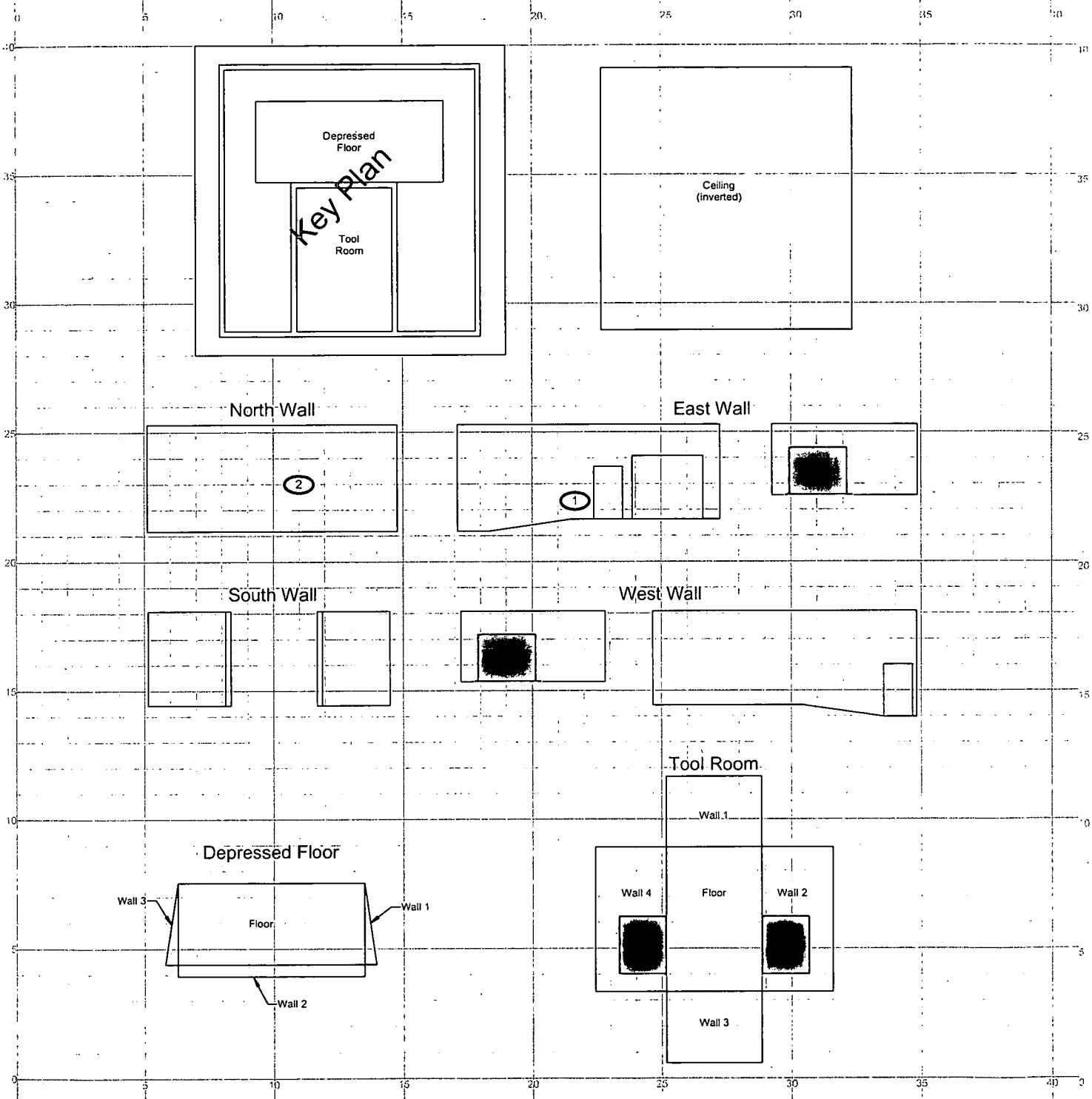
CHEMICAL SAMPLE MAP

Building 988 Interior
Asbestos



SURVEY MAP LEGEND

- (#) Asbestos Sample Location
- (#) Beryllium Sample Location
- [#] Lead Sample Location
- <#> RCRA/CERCLA Sample Location
- (#) PCB Sample Location
- Open/Inaccessible Area
- Area in Another Survey Unit

N

0 FEET 25

0 METERS 8

1 inch = 18 feet 1 grid sq. = 1 sq. m.

U.S. Department of Energy
Rocky Flats Environmental Technology Site

Prepared by: GIS Dept. 303-966-7707

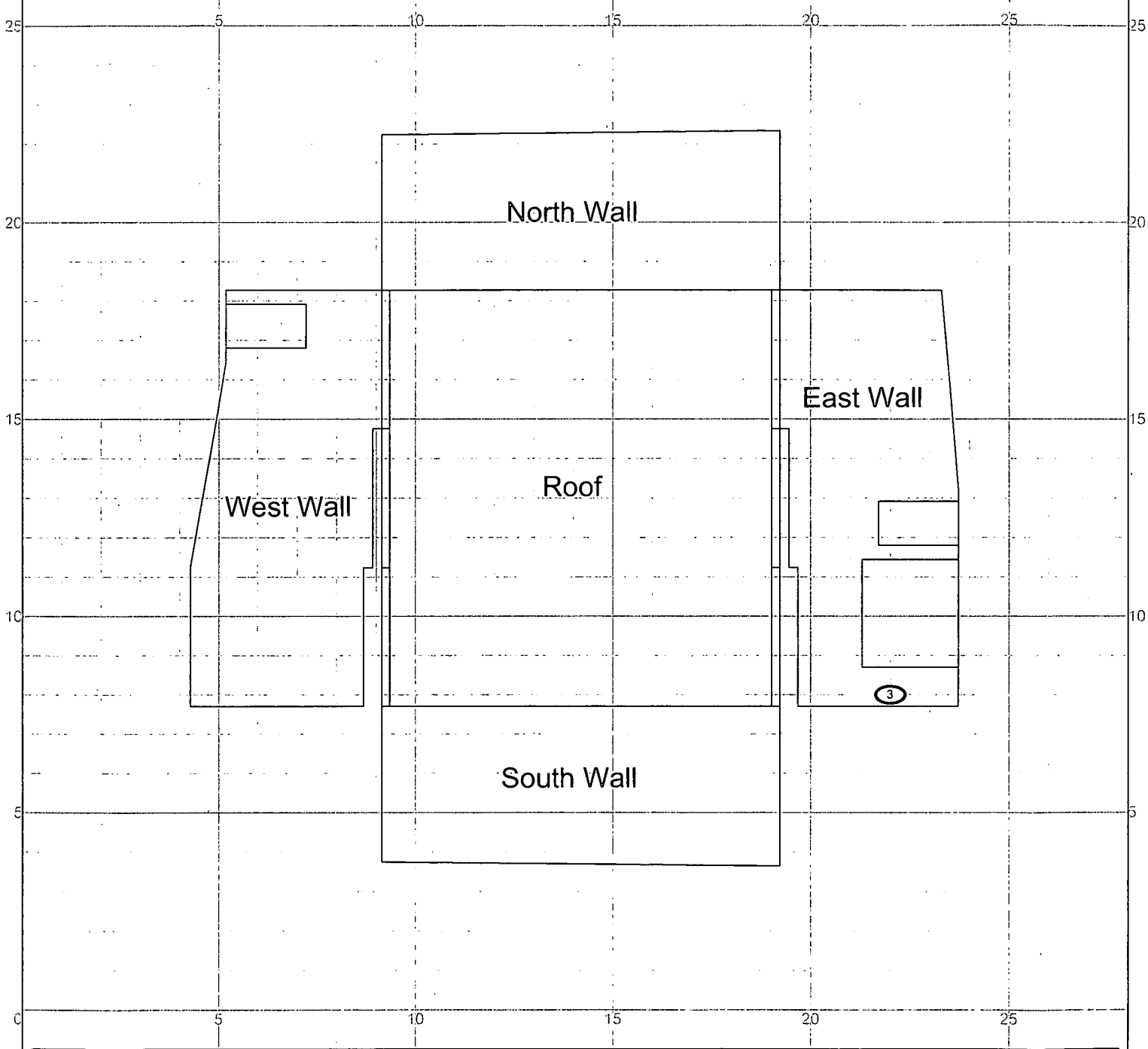
CH2MHILL Communications Group

KAISER-HILL

MAP ID: 03-0221/988IN-ASB July 7, 2003

CHEMICAL SAMPLE MAP

Building 988 Exterior
Asbestos



SURVEY MAP LEGEND

- Asbestos Sample Location
- Beryllium Sample Location
- Lead Sample Location
- RCRA/CERCLA Sample Location
- PCB Sample Location
- Open/Inaccessible Area
- Area in Another Survey Unit

N

0 FEET 15

0 METERS 5

1 inch = 12 feet 1 grid sq. = 1 sq. m.

U.S. Department of Energy
Rocky Flats Environmental Technology Site

Prepared by: GIS Dept. 303-966-7707

CH2MHILL
Communications Group

Prepared for: KAISER-HILL

MAP ID: 03-0000/988EX-ASB

July 7, 2003

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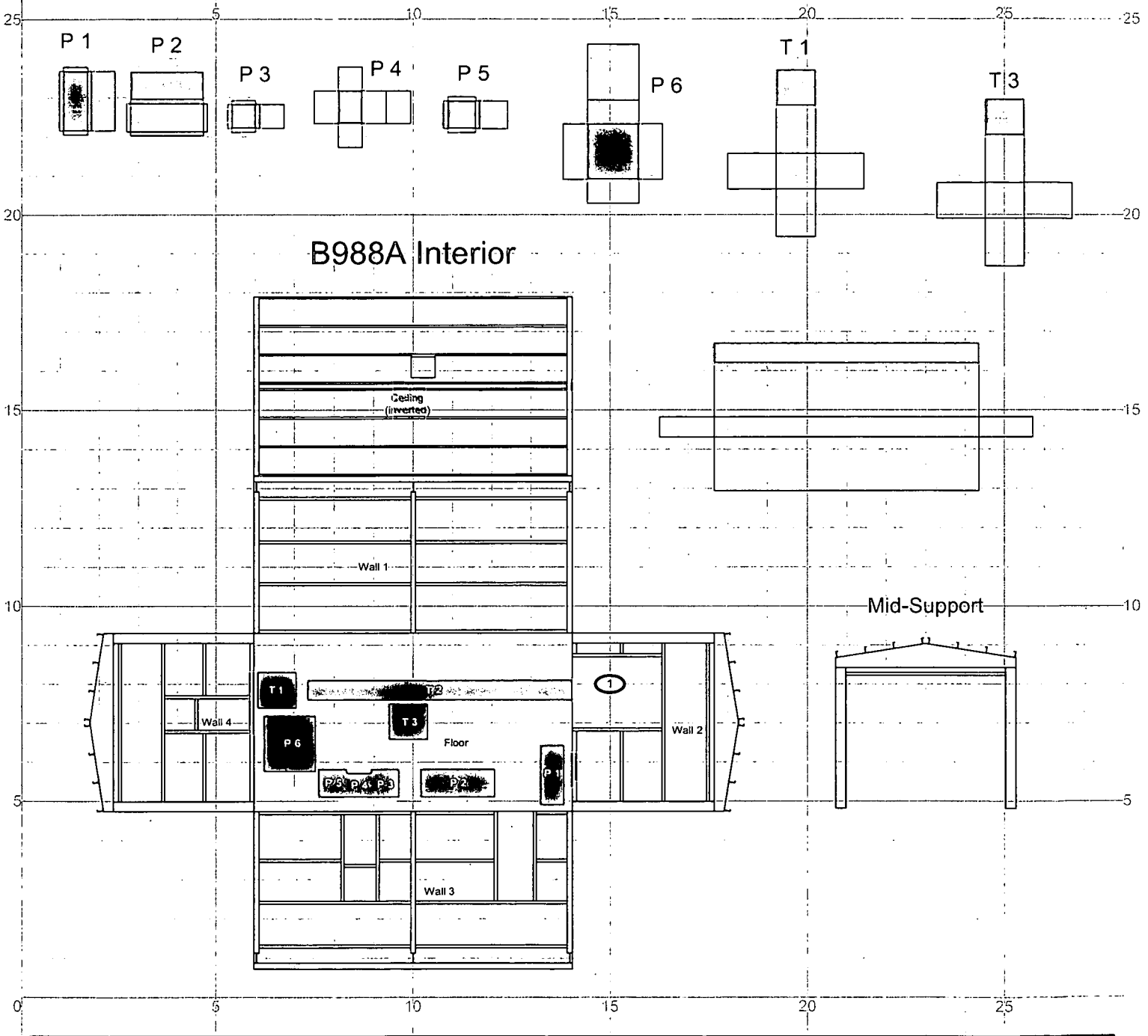
CHEMICAL SAMPLE MAP

Building 988A
Asbestos



SURVEY MAP LEGEND

- Asbestos Sample Location
- Beryllium Sample Location
- Lead Sample Location
- RCRA/CERCLA Sample Location
- PCB Sample Location
- Open/Inaccessible Area
- Area in Another Survey Unit

N

0 FEET 15
0 METERS 5

1 inch = 12 feet 1 grid sq. = 1 sq. m.

U.S. Department of Energy
Rocky Flats Environmental Technology Site

Prepared by: GIS Dept. 303-966-7707

CH2MHILL
Communications Group

KAISER-HILL

MAP ID: 03-0226/988A-INT-1-ASB Dec 1, 2004

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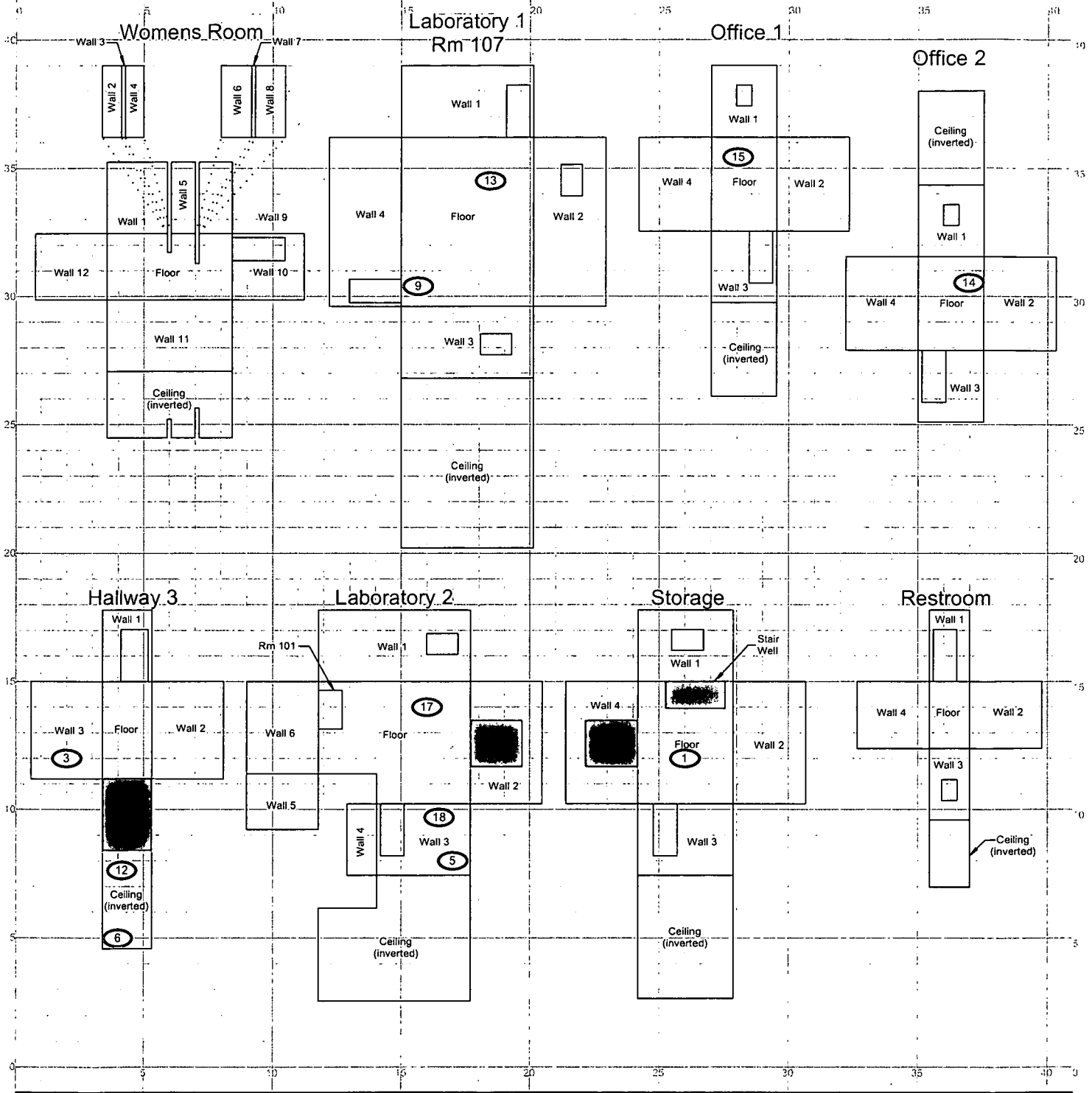
CHEMICAL SAMPLE MAP

Building 995 Interior
Asbestos



SURVEY MAP LEGEND

- Asbestos Sample Location
- Beryllium Sample Location
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- RCRA/CERCLA Sample Location
- PCB Sample Location
- Open/Inaccessible Area
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N

0 FEET 25

0 METERS 8

1 inch = 18 feet 1 grid sq. = 1 sq. m.

U.S. Department of Energy
Rocky Flats Environmental Technology Site

Prepared by: GIS Dept. 303-966-7707

CH2MHILL Communications Group

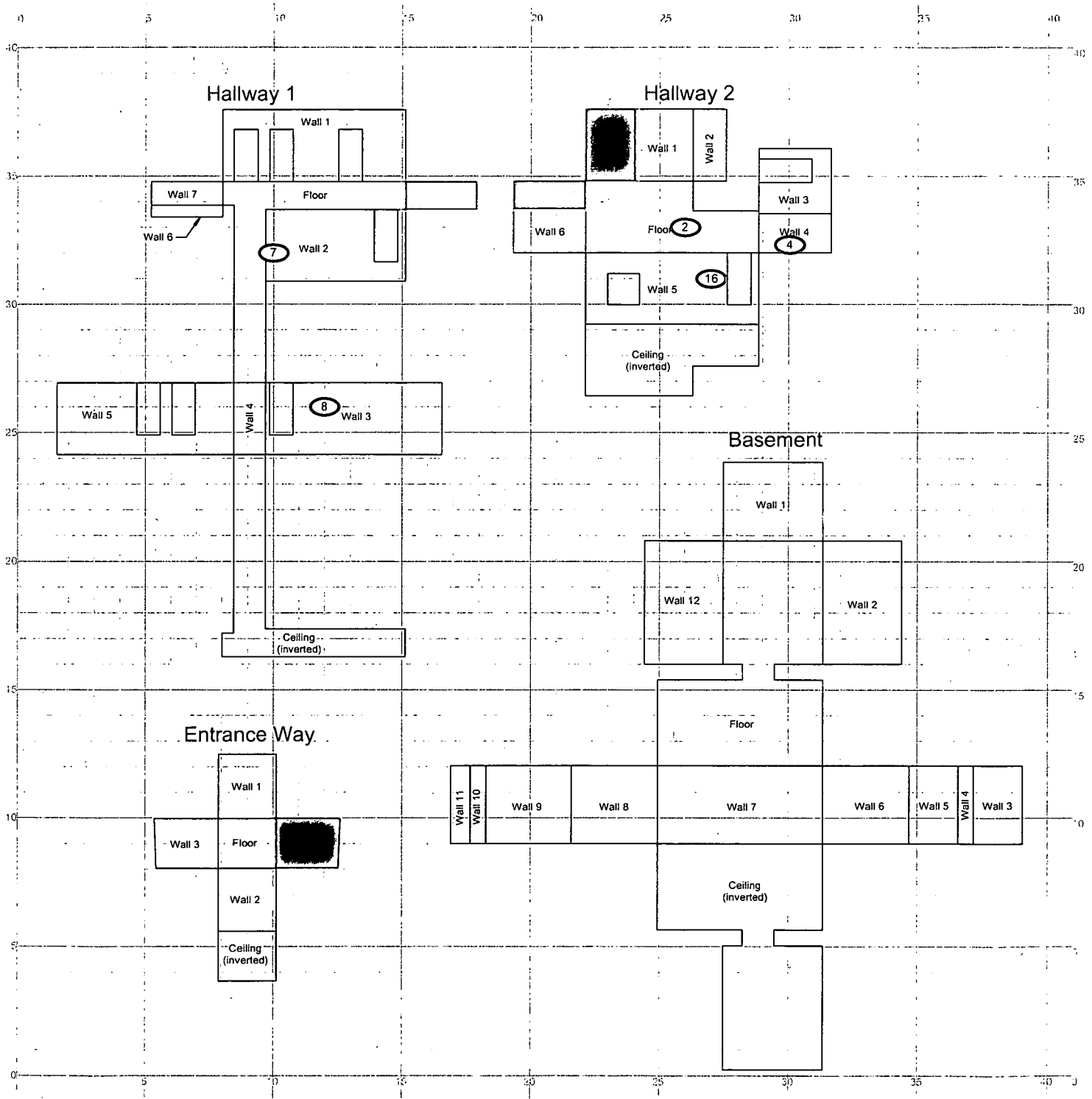
KAISER-HILL

MAP ID: 03-0221/995IN2-ASB Dec. 1, 2004

156

CHEMICAL SAMPLE MAP

Building 995 Interior
Asbestos



SURVEY MAP LEGEND

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N

0 FEET 25

0 METERS 8

1 inch = 18 feet 1 grid sq. = 1 sq. m.

U.S. Department of Energy
Rocky Flats Environmental Technology Site

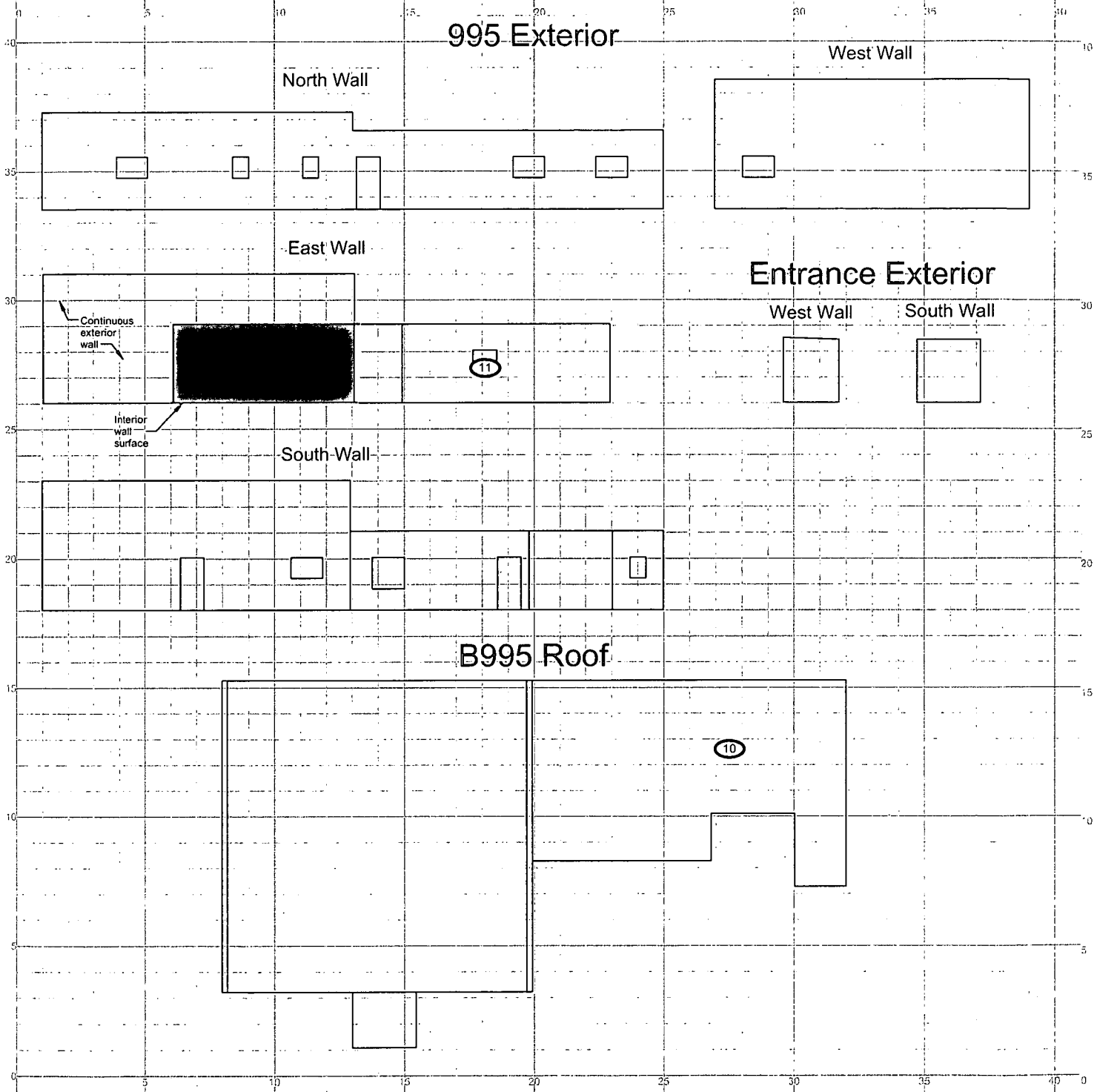
Prepared by: GIS Dept. 303-966-7707

CH2MHILL
Communications Group

MAP ID: 03-0221/995IN3-ASB Dec. 2, 2004

CHEMICAL SAMPLE MAP

Building 995 Exterior
Asbestos



SURVEY MAP LEGEND

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- PCB Sample Location
- Open/Inaccessible Area
- Area in Another Survey Unit

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0 METERS 8

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U.S. Department of Energy
Rocky Flats Environmental Technology Site

Prepared by: GIS Dept. 303-966-7707

CH2MHILL
Communications Group

Prepared for: KAISER-HILL COMPANY

MAP ID: 03-0221/995-EXT-ASB

Nov. 30, 2004

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Beryllium Data Summary

Sample Number	RIN	Bldg	Map Point Location	Room	Sample Location (Biased)	Result (ug/100cm²)
995-11162004-00-001	05D0170	IC-1	1	Main	Floor	<0.1
995-11162004-00-002	05D0170	IC-1	2	Main	Floor Drain	<0.1
995-11162004-00-003	05D0170	IC-1	3	Main	Floor	<0.1
995-11162004-00-004	05D0170	IC-1	4	Main	Wall	<0.1
995-11162004-00-005	05D0170	IC-1	5	Main	Wall	<0.1
995-11162004-00-006	05D0170	IC-1	6	Main	Fan Blade	<0.1
995-11162004-00-007	05D0170	IC-2	7	Main	Floor	<0.1
995-11162004-00-008	05D0170	IC-2	8	Main	Floor	<0.1
995-11162004-00-009	05D0170	IC-2	9	Main	Fan Blade	<0.1
995-11162004-00-010	05D0170	IC-2	10	Main	Floor Drain	<0.1
995-11162004-00-011	05D0170	IC-2	11	Main	Wall	<0.1
995-11162004-00-012	05D0170	IC-2	12	Main	Wall	<0.1
995-11162004-00-014	05D0170	IC-3	14	Main	Floor	<0.1
995-11162004-00-015	05D0170	IC-3	15	Main	Floor Drain	<0.1
995-11162004-00-016	05D0170	IC-3	16	Main	Floor	<0.1
995-11162004-00-017	05D0170	IC-3	17	Main	Wall	<0.1
995-11162004-00-018	05D0170	IC-3	18	Main	Wall	<0.1
995-11162004-00-019	05D0170	IC-3	19	Main	Fan Blade	<0.1
995-11162004-00-020	05D0170	995-C-5	20	Main	Paddle Blade	<0.1
995-11162004-00-021	05D0170	995-C-5	21	Main	Pipe Interior	<0.1
995-11162004-00-022	05D0170	995-C-5	22	Main	Floor	<0.1
995-11162004-00-023	05D0170	995-C-5	23	Main	Support Beam	<0.1
995-11162004-00-024	05D0170	995-C-5	24	Main	Stir Grate	<0.1
995-11162004-00-025	05D0170	995-C-5	25	Main	Support Table	<0.1
995-11162004-00-026	05D0170	995-AB-2	26	Main	Defuser	<0.1
995-11162004-00-027	05D0170	995-AB-2	27	Main	Pipe Exterior	<0.1
995-11162004-00-028	05D0170	995-AB-2	28	Main	Floor	<0.1
995-11162004-00-029	05D0170	995-AB-2	29	Main	Wall	<0.1
995-11162004-00-030	05D0170	995-AB-2	30	Main	Defuser	<0.1
995-11232004-00-100	05D0170	988	100	Main	Tank Interior	<0.1
995-11232004-00-101	05D0170	988	101	Main	Floor	<0.1
995-11232004-00-102	05D0170	988	102	Main	Floor Ramp	<0.1
995-11232004-00-103	05D0170	988	103	Main	Shelf	<0.1
995-11232004-00-104	05D0170	988	104	Main	Floor	<0.1
995-11232004-00-105	05D0170	988A	105	Main	On Equipment	<0.1
995-11232004-00-106	05D0170	988A	106	Main	Floor	<0.1
995-11232004-00-107	05D0170	988A	107	Main	Floor	<0.1
995-11232004-00-108	05D0170	988A	108	Main	On Equipment	<0.1
995-11232004-00-109	05D0170	988A	109	Main	On Equipment	<0.1
995-11232004-00-110	05D0170	995	110	Lab 1	Floor	<0.1
995-11232004-00-111	05D0170	995	111	Lab 2	Floor	<0.1
995-11232004-00-112	05D0170	995	112	Basement	On Pipe	<0.1
995-11232004-00-113	05D0170	995	113	Mens Locker	Inside Locker	<0.1
995-11232004-00-114	05D0170	995	114	Womens Locker	Inside Locker	<0.1
995-11232004-00-115	05D0170	995	115	Lab 1	Inside hood	<0.1
995-11232004-00-116	05D0170	T974A	116	100	Roller Platform	<0.1
995-11232004-00-117	05D0170	T974A	117	100	Floor	<0.1
995-11232004-00-118	05D0170	T974A	118	100	Floor under grating	<0.1
995-11232004-00-119	05D0170	T974A	119	100	Blower Fan	<0.1
995-11232004-00-120	05D0270	974	120	Main	Drying Bed 1, floor	<0.1
995-11232004-00-121	05D0270	974	121	Main	Drying Bed 2, floor	<0.1
995-11232004-00-122	05D0270	974	122	Main	Drying Bed 3, floor	<0.1
995-11232004-00-123	05D0270	974	123	Main	Drying Bed 1, Pit floor	<0.1
995-11232004-00-124	05D0270	974	124	Main	Drying Bed 3, Pit floor	<0.1
995-11232004-00-125	05D0270	974	125	Main	Drying Bed 1, handrail	<0.1
995-11232004-00-126	05D0270	974	126	Main	I-beam	<0.1
995-11232004-00-127	05D0270	974	127	100	Chainveyor	<0.1
995-11232004-00-128	05D0270	974	128	100	Filter return pipe	<0.1
995-11232004-00-129	05D0270	974	129	100	Hopper	<0.1
995-11232004-00-130	05D0270	977	130	Main	Pit 1, floor	<0.1
995-11232004-00-131	05D0270	977	131	Main	Drying Bed 1, handrail	<0.1

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Sample Number	RIN	Bldg	Map Point Location	Room	Sample Location (Biased)	Result (ug/100cm^2)
995-11232004-00-132	05D0270	977	132	Main	Drying Bed 2, floor	<0.1
995-11232004-00-133	05D0270	977	133	Main	Drying Bed 2, rail	<0.1
995-11232004-00-134	05D0270	977	134	Main	Drying Bed 1, rail	<0.1
995-11232004-00-135	05D0270	977	135	Main	Drying Bed 1, floor	<0.1
995-11232004-00-136	05D0270	977	136	Main	Drying Bed 2, floor	<0.1
995-11232004-00-137	05D0270	977	137	Main	Drying Bed 1, rail	<0.1
995-11232004-00-138	05D0270	977	138	Main	Drying Bed 1, pipe	<0.1
995-11232004-00-139	05D0270	977	139	Main	Drying Bed 1, beam	<0.1
995-11162004-00-131	05D0170	995-AB-2	131	Main	Floor	<0.1
995-11162004-00-132	05D0170	995-AB-1	132	Main	Pipe Interior	<0.1
995-11162004-00-133	05D0170	995-AB-1	133	Main	Floor	<0.1
995-11162004-00-134	05D0170	995-AB-1	134	Main	On Pipe	<0.1
995-11162004-00-135	05D0170	995-AB-1	135	Main	On Flange	<0.1
995-11162004-00-136	05D0170	995-AB-1	136	Main	Wall	<0.1
995-11162004-00-137	05D0170	995-AB-1	137	Main	Pipe Support	<0.1
995-11162004-00-138	05D0170	995-C-2	138	Main	Floor	<0.1
995-11162004-00-139	05D0170	995-C-2	139	Main	Rail	<0.1
995-11162004-00-140	05D0170	995-C-2	140	Main	Floor	<0.1
995-11162004-00-141	05D0170	995-C-2	141	Main	Rail	<0.1
995-11162004-00-142	05D0170	995-C-2	142	Main	Floor	<0.1
995-11162004-00-143	05D0170	995-C-2	143	Main	On Pipe	<0.1
995-11162004-00-144	05D0170	995-C-3	144	Main	Floor	<0.1
995-11162004-00-145	05D0170	995-C-3	145	Main	Stir Blade	<0.1
995-11162004-00-146	05D0170	995-C-3	146	Main	On Equipment	<0.1
995-11162004-00-147	05D0170	995-C-3	147	Main	Floor	<0.1
995-11162004-00-148	05D0170	995-C-3	148	Main	Stir Blade	<0.1
995-11162004-00-149	05D0170	995-C-3	149	Main	Floor	<0.1
995-11162004-00-150	05D0170	995-C-3	150	Main	On Pipe	<0.1
995-11162004-00-151	05D0170	995-C-4	151	Main	Floor	<0.1
995-11162004-00-152	05D0170	995-C-4	152	Main	Floor	<0.1
995-11162004-00-153	05D0170	995-C-4	153	Main	Floor	<0.1
995-11162004-00-154	05D0170	995-C-4	154	Main	Wall	<0.1
995-11162004-00-155	05D0170	995-C-4	155	Main	Wall	<0.1
995-11162004-00-156	05D0170	995-C-4	156	Main	On beam	<0.1
995-11162004-00-157	05D0170	995-C-1	157	Main	Floor	<0.1
995-11162004-00-158	05D0170	995-C-1	158	Main	On Pipe	<0.1
995-11162004-00-159	05D0170	995-C-1	159	Main	On Rail	<0.1
995-11162004-00-160	05D0170	995-C-1	160	Main	Floor	<0.1
995-06122003-315-101	03Z1880	995	1	Basement	On concrete floor	< 0.1
995-06122003-315-102	03Z1880	995	2	Hall 2	Top of electrical panel, north wall	< 0.1
995-06122003-315-103	03Z1880	995	3	101	On floor by sanitary drain berm	< 0.1
995-06122003-315-104	03Z1880	995	4	Lab 1	On linoleum floor	< 0.1
995-06122003-315-105	03Z1880	995	5	Men's	On concrete floor by locker #6	< 0.1
988-06122003-315-101	03Z1880	988	1	Depress	Top of gray EFT filter pipe	< 0.1
988-06122003-315-102	03Z1880	988	2	Depress	On concrete floor	< 0.1
988-06122003-315-103	03Z1880	988	3	Tool	On metal shelf, west wall	< 0.1
988-06122003-315-104	03Z1880	988	4	Tool	On sump pump housing	< 0.1
988-06122003-315-105	03Z1880	988	5	Main	On concrete floor at entry	< 0.1
988A-06122003-315-101	03Z1880	988A	1	Main	Top of 480V electrical transformer	< 0.1
988A-06122003-315-102	03Z1880	988A	2	Main	On window sill, west wall	< 0.1
988A-06042003-315-103	03Z1880	988A	3	Main	On electrical control panel, south wall	< 0.1
988A-06122003-315-104	03Z1880	988A	4	Main	On concrete pad, east wall	< 0.1
988A-06122003-315-105	03Z1880	988A	5	Main	On angle iron brace, north wall	< 0.1
T974A-06122003-315-101	03Z1880	T974A	1	101	Top of H_2 S monitor, south wall	< 0.1
T974A-06122003-315-102	03Z1880	T974A	2	101	Top of 480V power panel, west wall	< 0.1
T974A-06122003-315-103	03Z1880	T974A	3	100	Top of fluorescent light fixture	< 0.1
T974A-06122003-315-104	03Z1880	T974A	4	100	Top of fluorescent light fixture	< 0.1
T974A-06122003-315-105	03Z1880	T974A	5	100	Top of fluorescent light fixture	< 0.1

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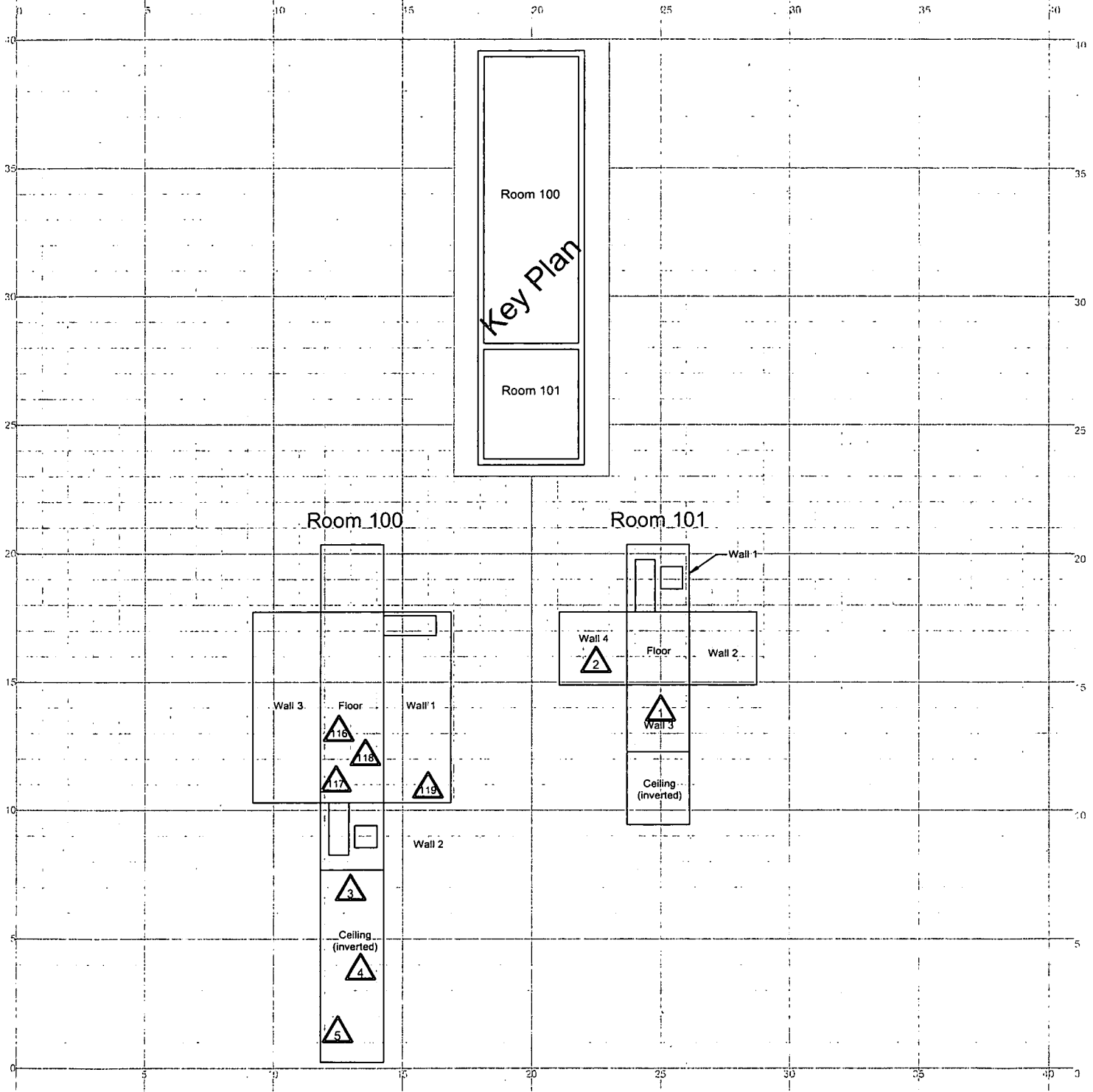
CHEMICAL SAMPLE MAP

T974A Interior
Beryllium



SURVEY MAP LEGEND

- Asbestos Sample Location
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- PCB Sample Location
- Open/Inaccessible Area
- Area in Another Survey Unit

N

0 FEET 25

0 METERS 8

1 inch = 18 feet 1 grid sq. = 1 sq. m.

U.S. Department of Energy
Rocky Flats Environmental Technology Site

Prepared by: GIS Dept. 303-966-7707

CH2MHILL
Communications Group

KAISER-HILL COMPANY

MAP ID: 03-0221/T974A-BE Dec 1, 2004

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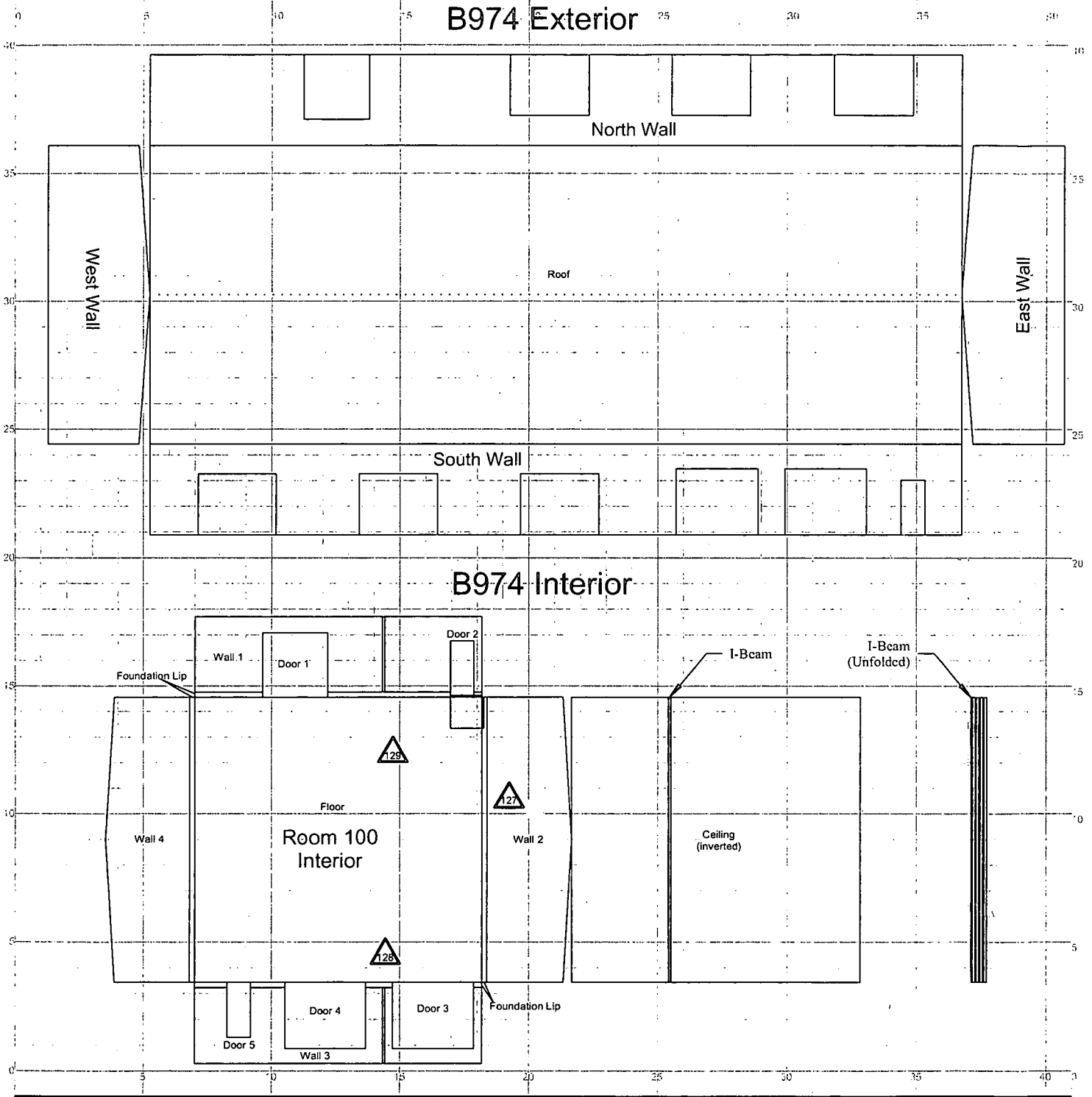
CHEMICAL SAMPLE MAP

Building 974
Beryllium



SURVEY MAP LEGEND

- Asbestos Sample Location
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- PCB Sample Location
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- Area Shown in Another View

N

0 FEET 25

0 METERS 8

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U.S. Department of Energy
Rocky Flats Environmental Technology Site

Prepared by: GIS Dept. 303-966-7707

CH2MHILL
Communications Group

MAP ID: 03-0226/974-1-Chem June 4, 2003

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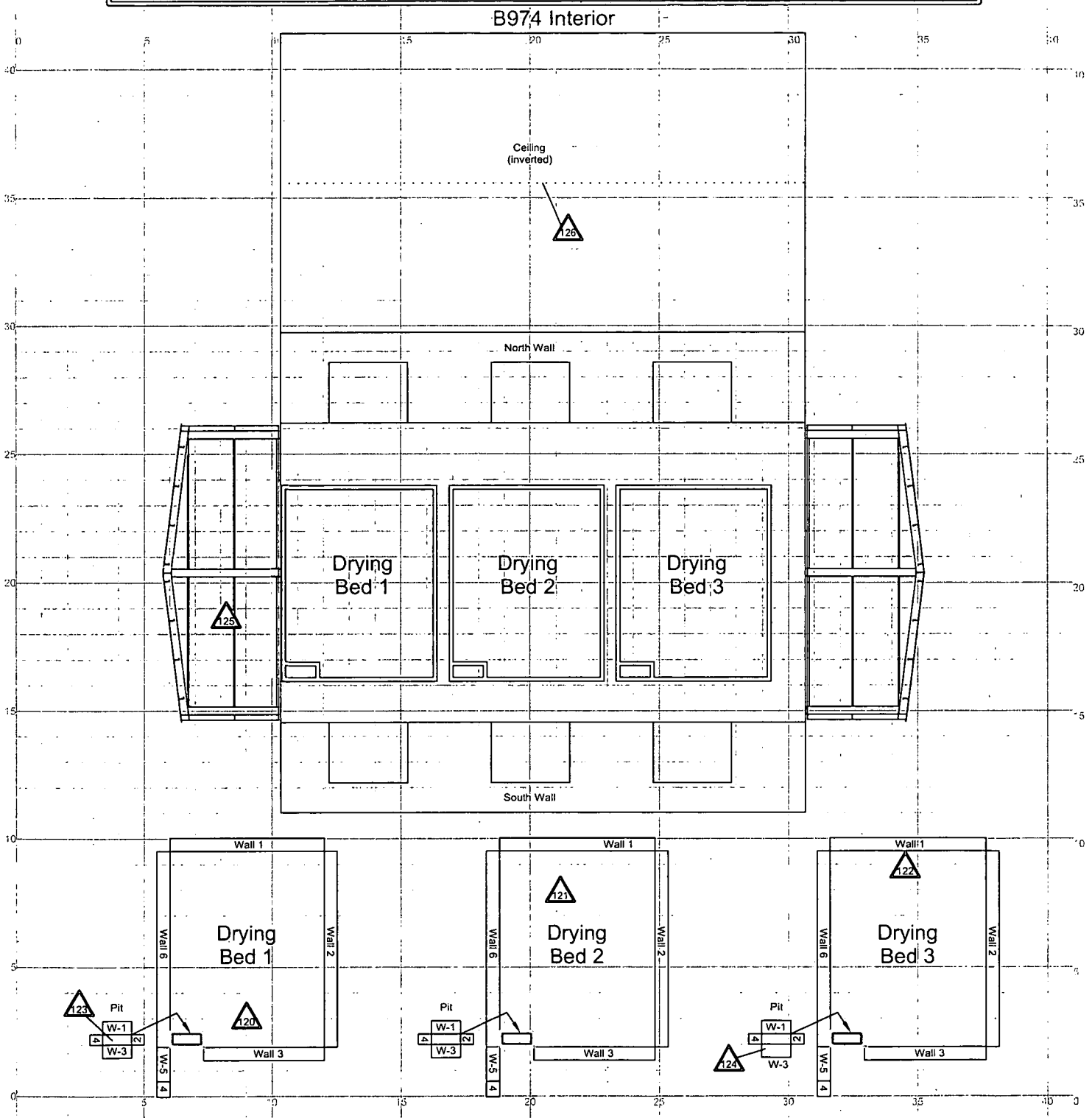
CHEMICAL SAMPLE MAP

Building 974
Beryllium



SURVEY MAP LEGEND

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- Lead Sample Location
- RCRA/CERCLA Sample Location
- PCB Sample Location
- Open/Inaccessible Area
- Area Shown in Other Views

N

0 FEET 25

0 METERS 8

1 inch = 18 feet 1 grid sq. = 1 sq. m.

U.S. Department of Energy
Rocky Flats Environmental Technology Site

Prepared by: GIS Dept. 303-966-7707

CH2MHILL
Communications Group

KAISER-HILL COMPANY

MAP ID: 03-0226/974-2-Chem June 4, 2003

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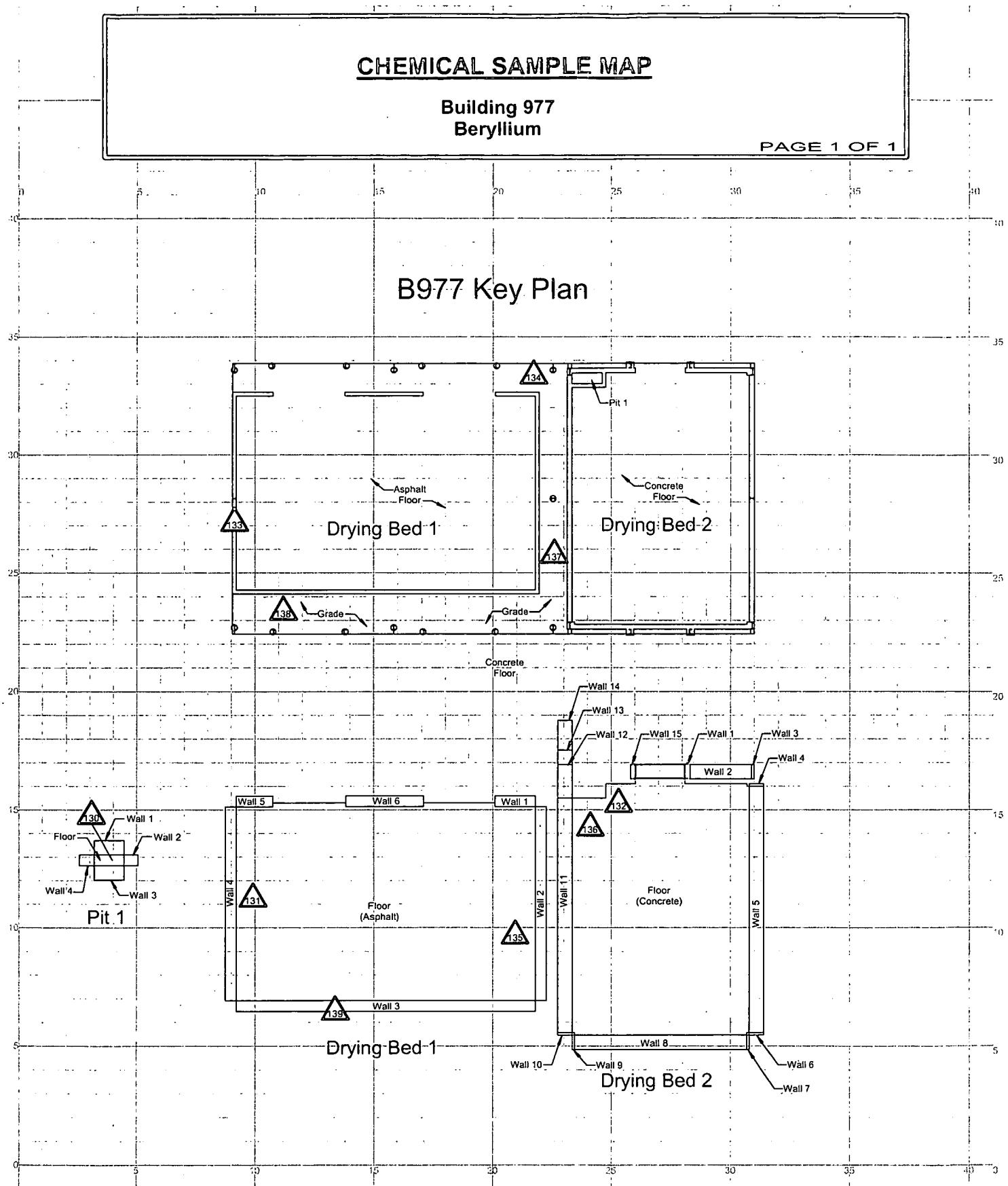
CHEMICAL SAMPLE MAP

Building 977
Beryllium



SURVEY MAP LEGEND

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- Lead Sample Location
- RCRA/CERCLA Sample Location
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- Open/Inaccessible Area
- Area in Another Survey Unit

N

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0 METERS 8

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U.S. Department of Energy
Rocky Flats Environmental Technology Site

Prepared by: GIS Dept. 303-966-7707

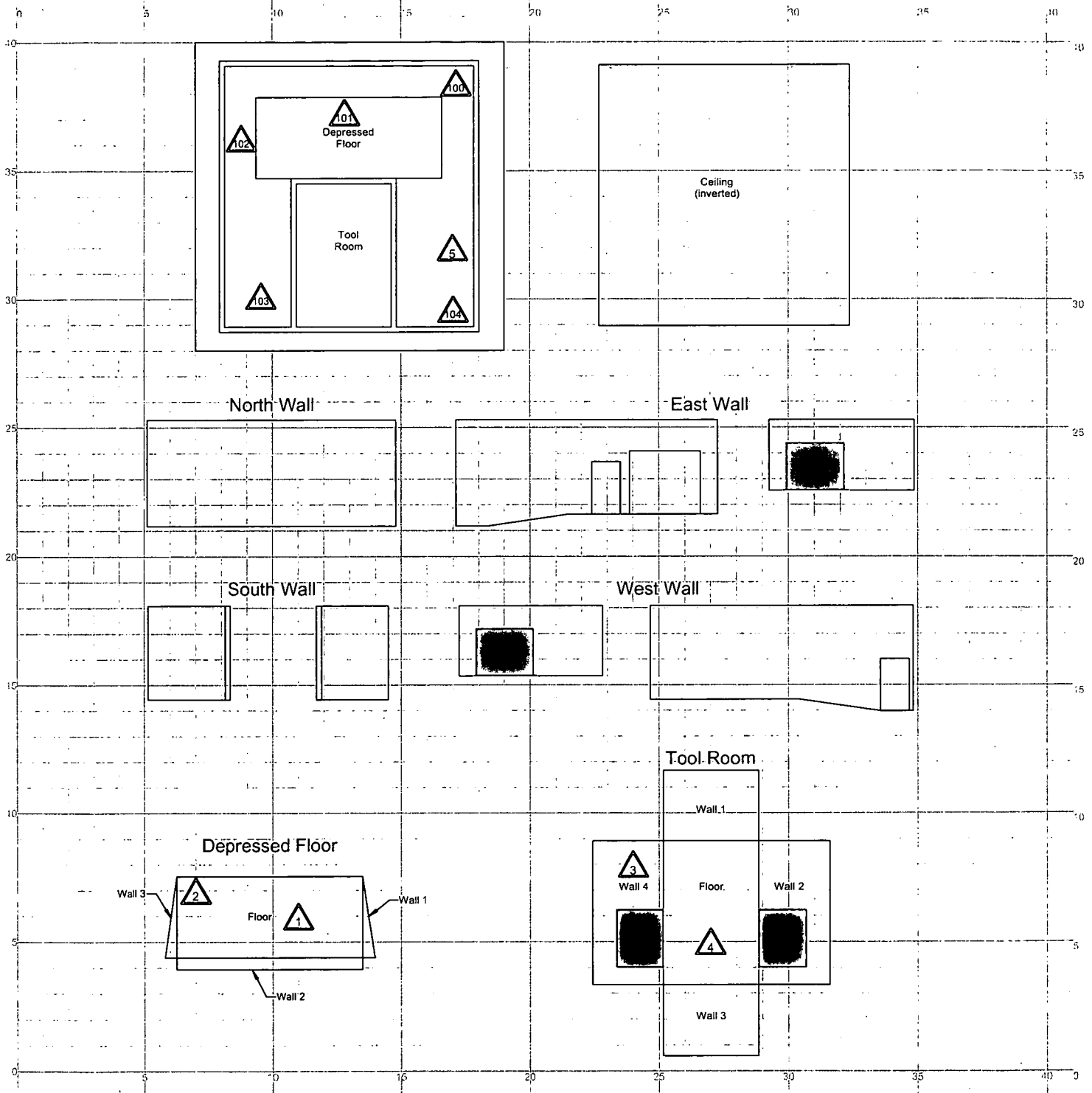
CH2MHILL Communications Group

KAISER-HILL

MAP ID: 03-0226/977-INT Feb. 6, 2003

CHEMICAL SAMPLE MAP

Building 988 Interior
Beryllium



SURVEY MAP LEGEND

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- RCRA/CERCLA Sample Location
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N

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U.S. Department of Energy
Rocky Flats Environmental Technology Site

Prepared by: GIS Dept. 303-966-7707

CH2MHILL
Communications Group

KAISER-HILL

MAP ID: 03-0221/988IN-BE Dec 1, 2004

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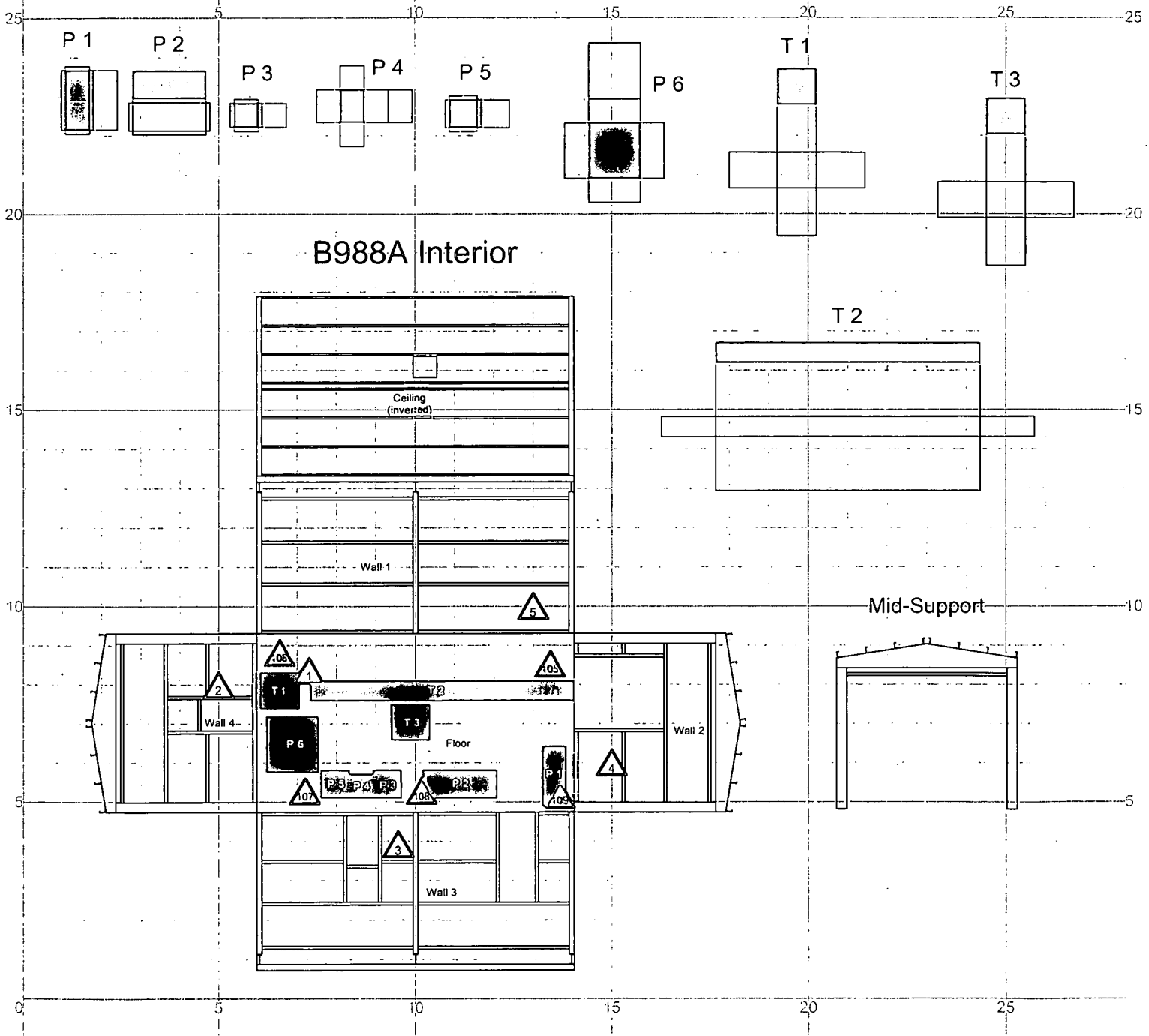
CHEMICAL SAMPLE MAP

Building 988A Interior
Beryllium



SURVEY MAP LEGEND

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- PCB Sample Location
- Open/Inaccessible Area
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N

0 FEET 15

0 METERS 5

1 inch = 12 feet 1 grid sq. = 1 sq. m.

U.S. Department of Energy
Rocky Flats Environmental Technology Site

Prepared by: GIS Dept. 303-966-7707

CH2MHILL Communications Group

KAISER-HILL COMPANY

MAP ID: 03-0221/988A-IN-BE July 7, 2003

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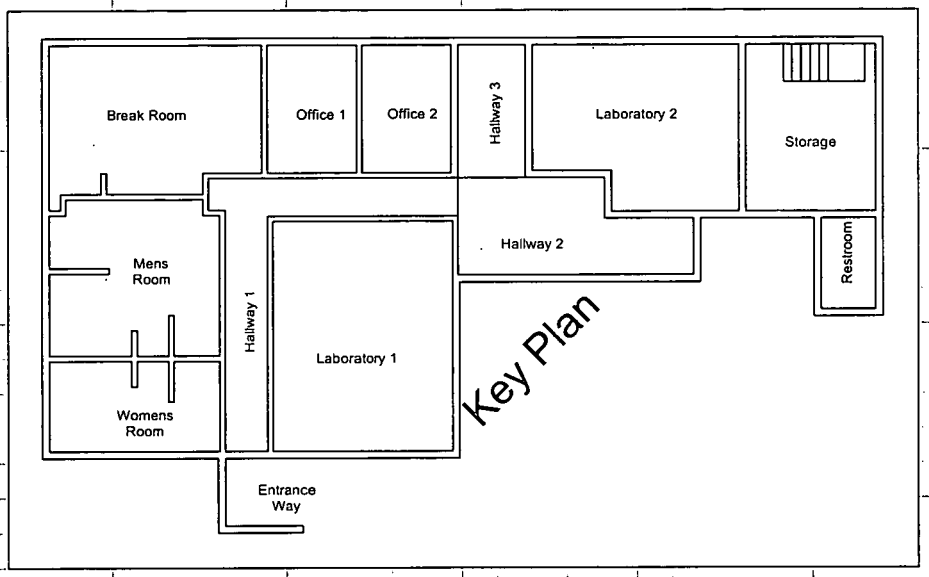
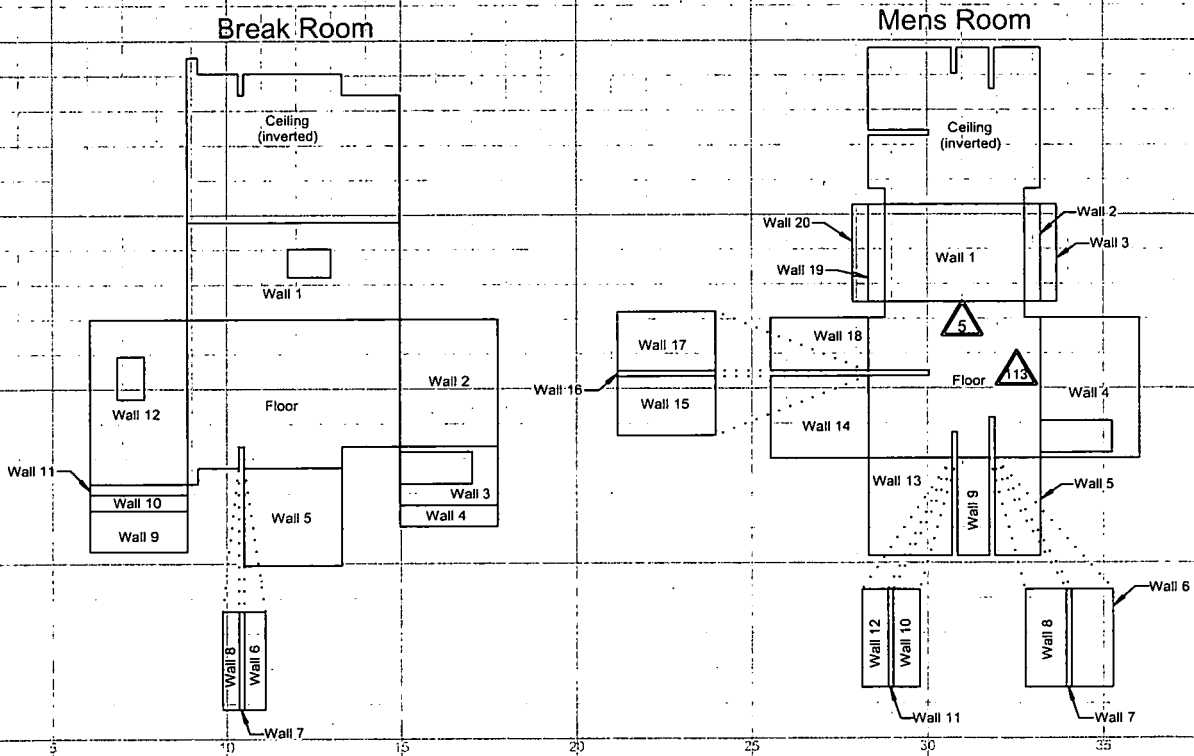
CHEMICAL SAMPLE MAP

Building 995 Interior
Beryllium





SURVEY MAP LEGEND

- Asbestos Sample Location
- Beryllium Sample Location
- Lead Sample Location
- RCRA/CERCLA Sample Location
- PCB Sample Location
- Open/Inaccessible Area
- Area in Another Survey Unit

N

0 FEET 25

0 METERS 8

1 inch = 18 feet 1 grid sq. = 1 sq. m.

U.S. Department of Energy
Rocky Flats Environmental Technology Site

Prepared by: GIS Dept. 303-966-7707

CH2MHILL
Communications Group

KAISER-HILL COMPANY

MAP ID: 03-0221/995IN1-BE Dec 1, 2004

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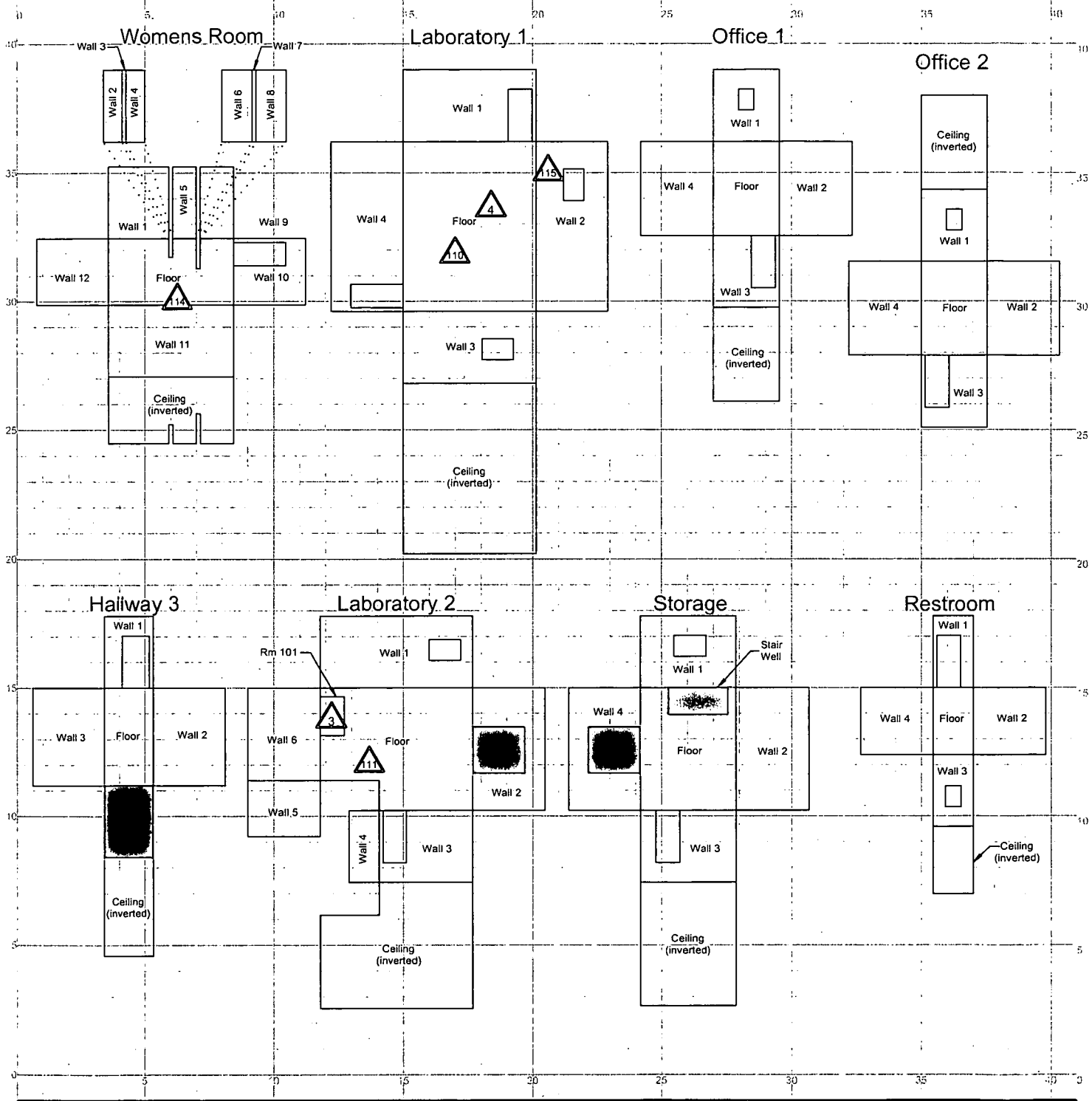
CHEMICAL SAMPLE MAP

Building 995 Interior
Beryllium



SURVEY MAP LEGEND

- Asbestos Sample Location
- Beryllium Sample Location
- Lead Sample Location
- RCRA/CERCLA Sample Location
- PCB Sample Location
- Open/Inaccessible Area
- Area in Another Survey Unit

N

0 FEET 25

0 METERS 8

1 inch = 18 feet 1 grid sq. = 1 sq. m.

U.S. Department of Energy
Rocky Flats Environmental Technology Site

Prepared by: GIS Dept. 303-966-7707

CH2MHILL Communications Group

KAISER-HILL

MAP ID: 03-0221/995IN2-BE Dec 1, 2004

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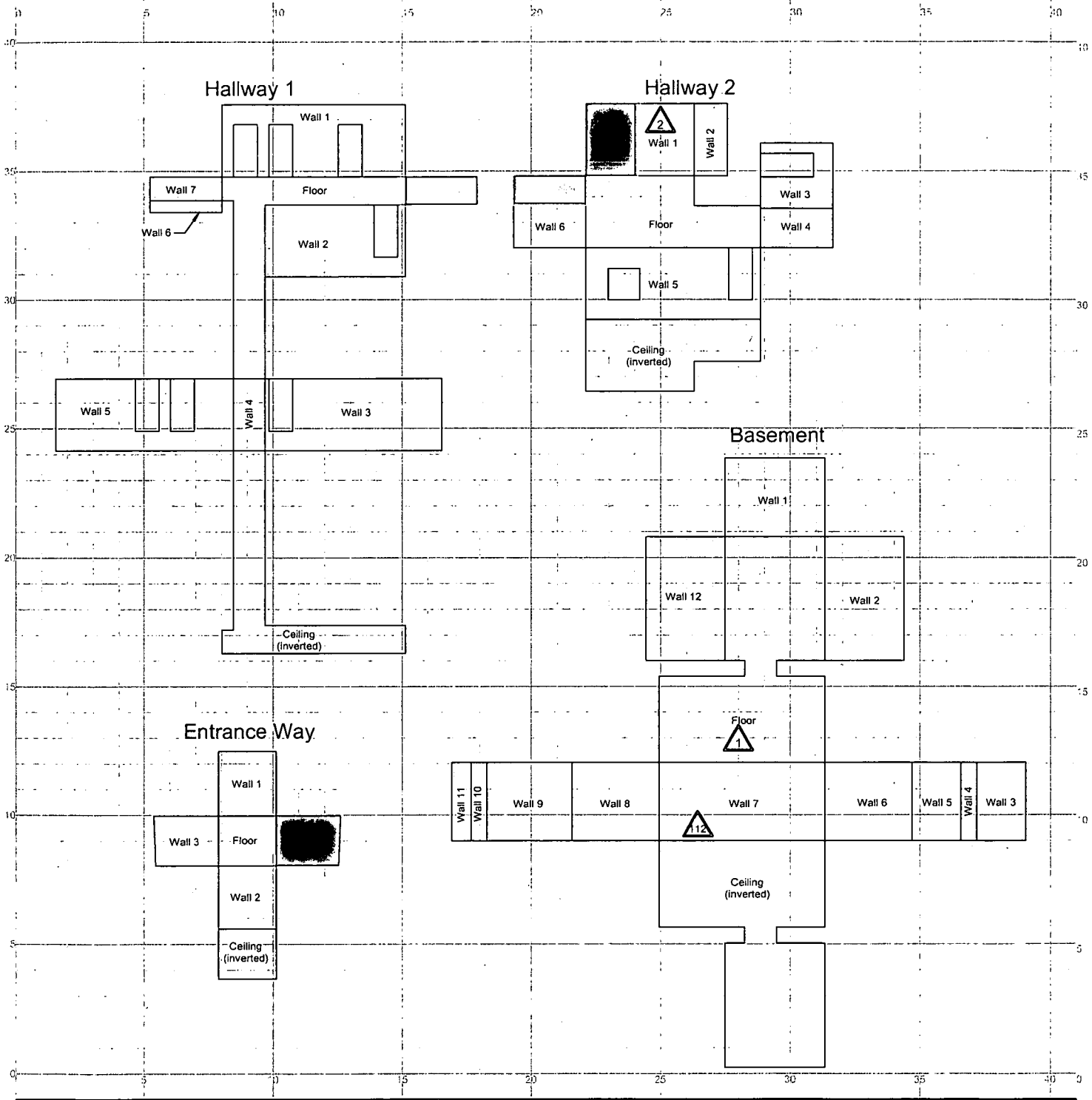
CHEMICAL SAMPLE MAP

Building 995 Interior
Beryllium



SURVEY MAP LEGEND

- Asbestos Sample Location
- Beryllium Sample Location
- Lead Sample Location
- RCRA/CERCLA Sample Location
- PCB Sample Location
- Open/Inaccessible Area
- Area in Another Survey Unit

N

0 FEET 25

0 METERS 8

1 inch = 18 feet 1 grid sq. = 1 sq. m.

U.S. Department of Energy
Rocky Flats Environmental Technology Site

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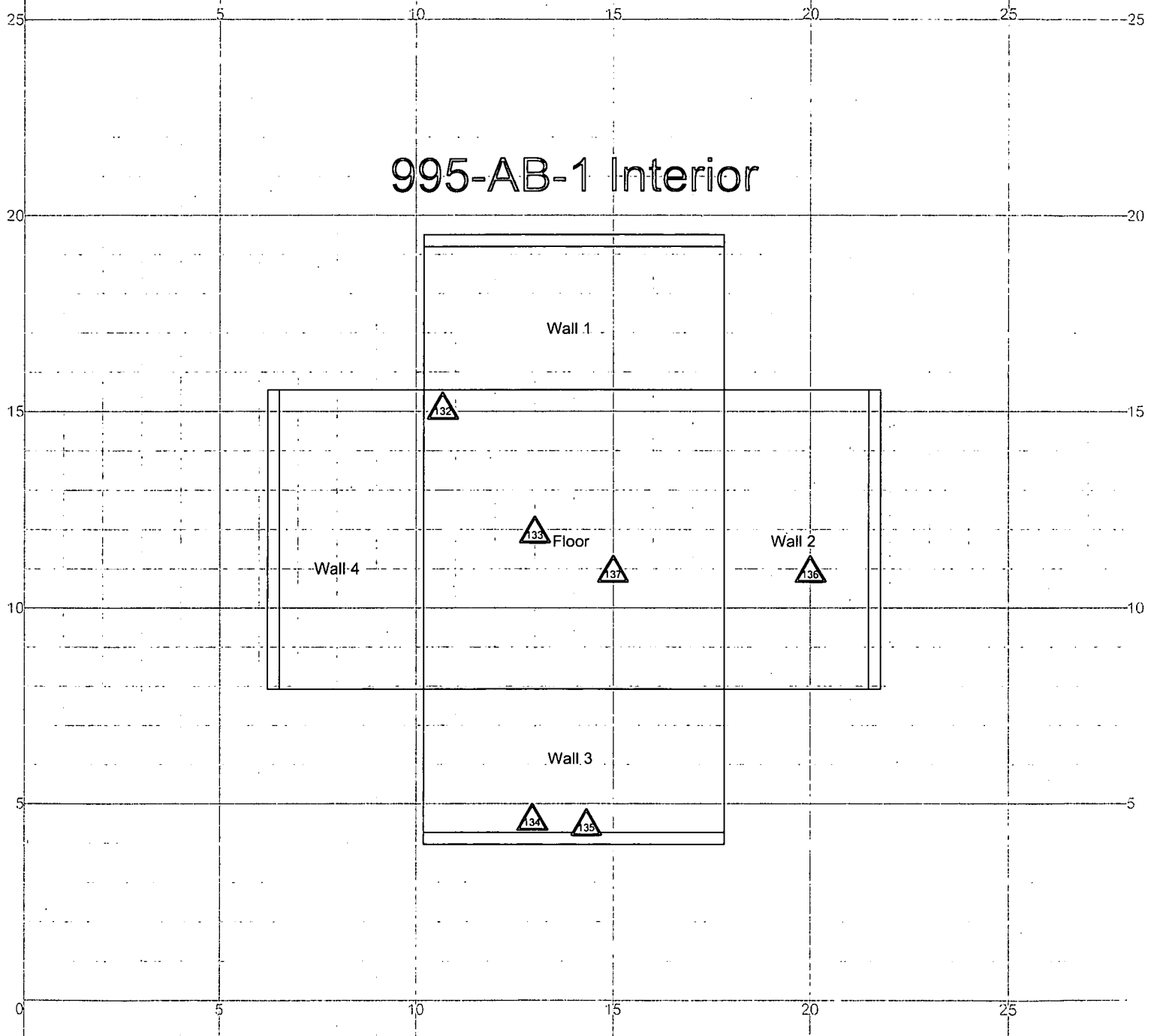
CH2MHILL Communications Group

KAISER-HILL

MAP ID: 03-0221/995IN3-BE Dec 1, 2004

CHEMICAL SAMPLE MAP

Building 995-AB-1
Beryllium



SURVEY MAP LEGEND

- Asbestos Sample Location
- Beryllium Sample Location
- Lead Sample Location
- RCRA/CERCLA Sample Location
- PCB Sample Location
- Open/Inaccessible Area
- Area in Another Survey Unit

N

0 FEET 15

0 METERS 5

1 inch = 12 feet 1 grid sq. = 1 sq. m.

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Rocky Flats Environmental Technology Site

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CH2MHILL Communications Group

Prepared for: KAISER-HILL

MAP ID: 03-0226\995-AB-1_BE

Nov. 16, 2004

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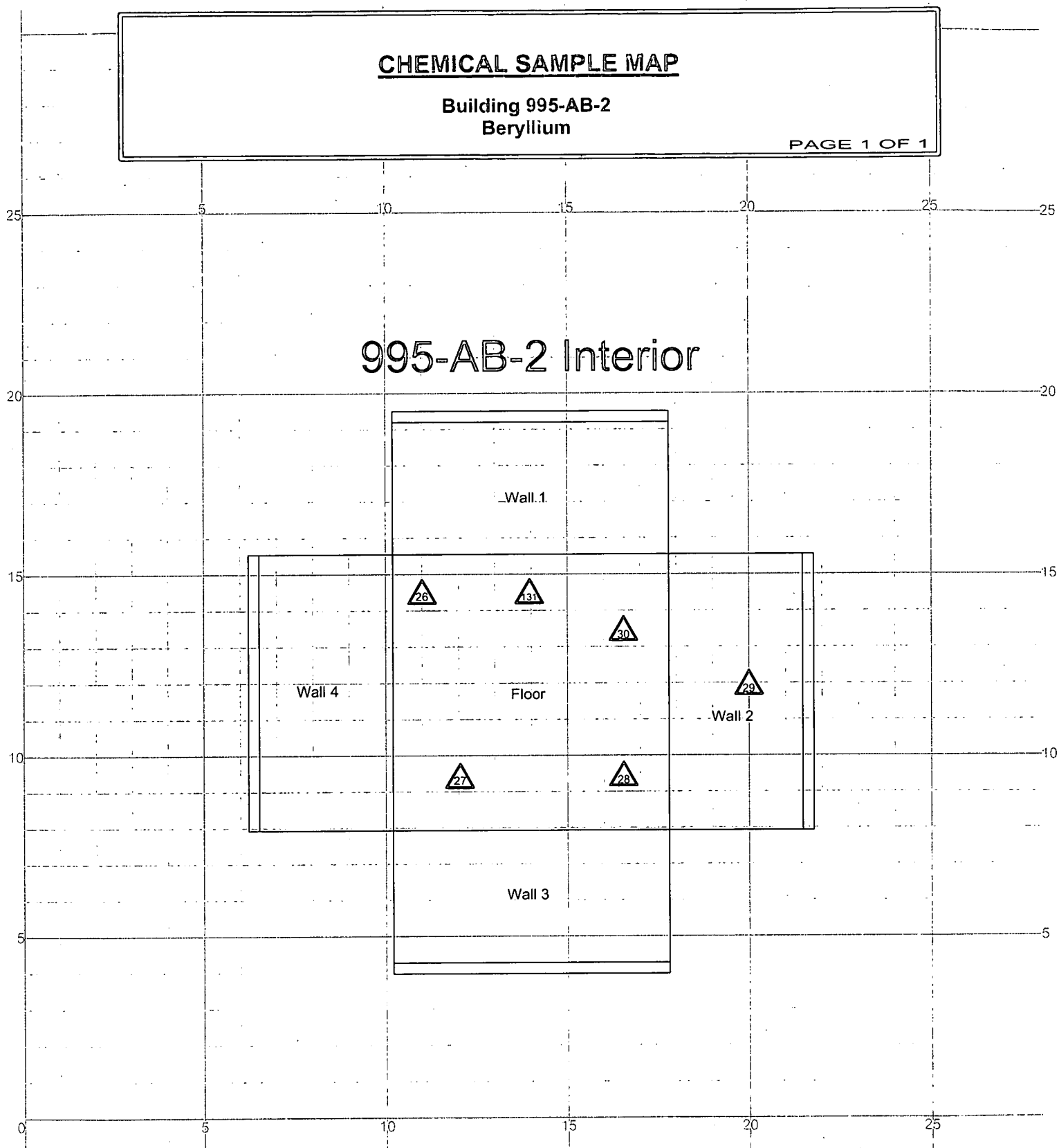
CHEMICAL SAMPLE MAP

Building 995-AB-2
Beryllium



SURVEY MAP LEGEND

- Asbestos Sample Location
- Beryllium Sample Location
- Lead Sample Location
- RCRA/CERCLA Sample Location
- PCB Sample Location
- Open/Inaccessible Area
- Area in Another Survey Unit

N

0 FEET 15

0 METERS 5

1 inch = 12 feet 1 grid sq. = 1 sq. m.

U.S. Department of Energy
Rocky Flats Environmental Technology Site

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Communications Group

Prepared for: KAISER-HILL COMPANY

MAP ID: 03-0226\995-AB-2_BE Nov 16, 2004

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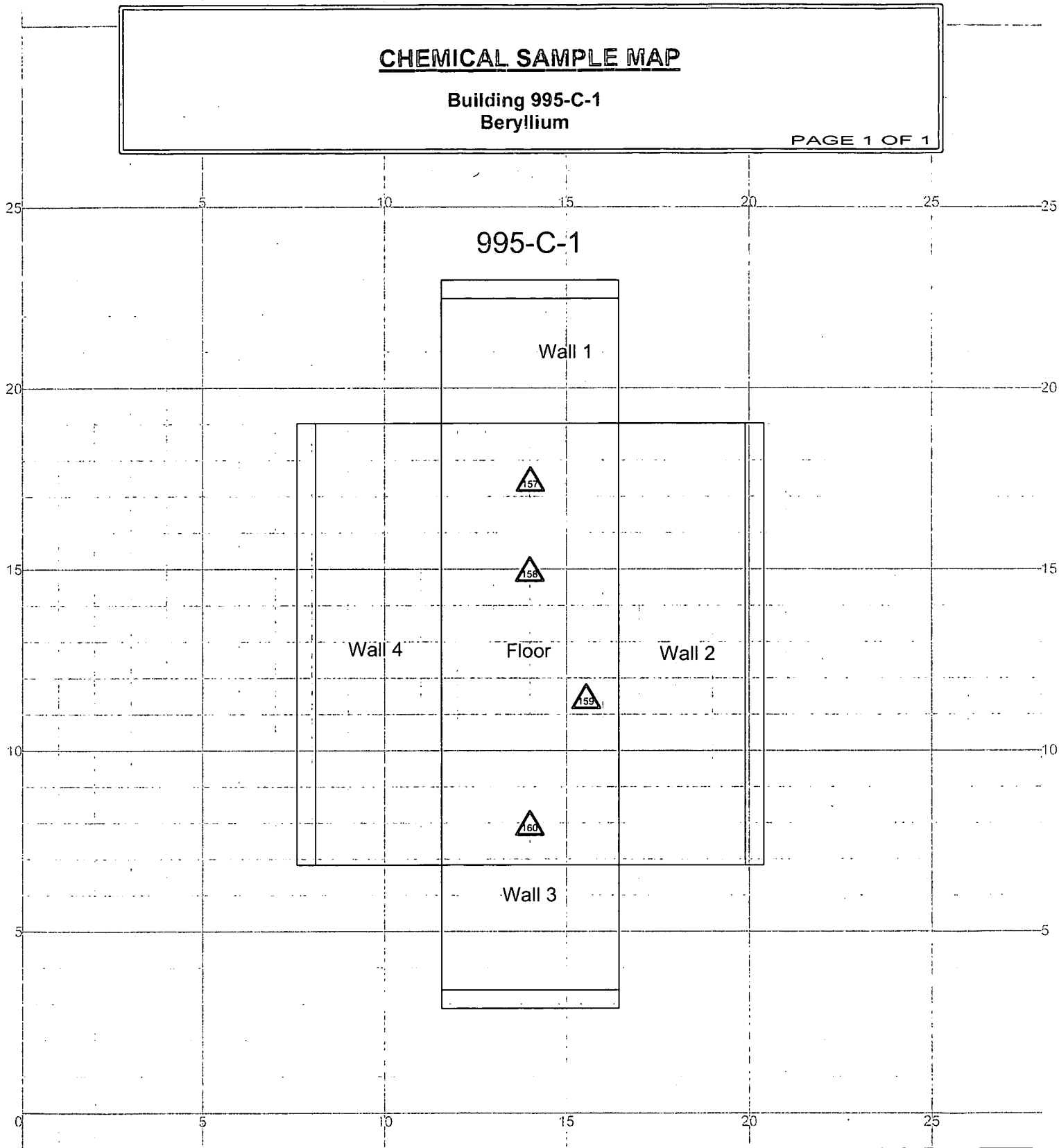
CHEMICAL SAMPLE MAP

Building 995-C-1
Beryllium



SURVEY MAP LEGEND

- Asbestos Sample Location
- Beryllium Sample Location
- Lead Sample Location
- RCRA/CERCLA Sample Location
- PCB Sample Location
- Open/Inaccessible Area
- Area in Another Survey Unit

N

0 FEET 6

0 METERS 2

1 inch = 6 feet 1 grid sq. = .25 sq. m.

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Rocky Flats Environmental Technology Site

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Prepared for:

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Communications Group

MAP ID: 03-0226\995-C-1_BE

Nov. 16, 2004

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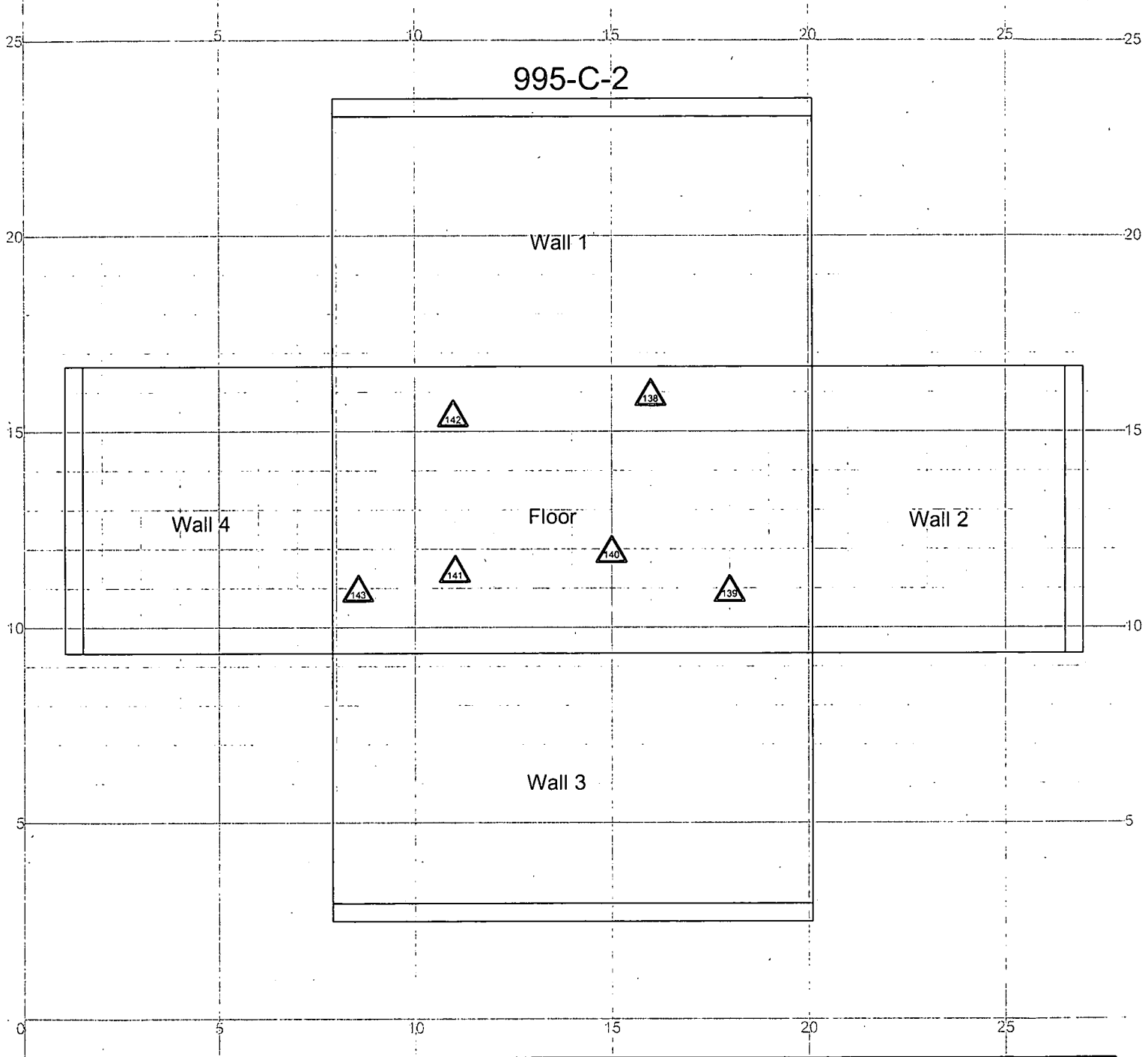
CHEMICAL SAMPLE MAP

Building 995-C-2
Beryllium



SURVEY MAP LEGEND

- Asbestos Sample Location
- Beryllium Sample Location
- Lead Sample Location
- RCRA/CERCLA Sample Location
- PCB Sample Location
- Open/Inaccessible Area
- Area in Another Survey Unit

N

0 FEET 6

0 METERS 2

1 inch = 6 feet 1 grid sq. = .25 sq. m.

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Rocky Flats Environmental Technology Site

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Prepared for:

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Communications Group

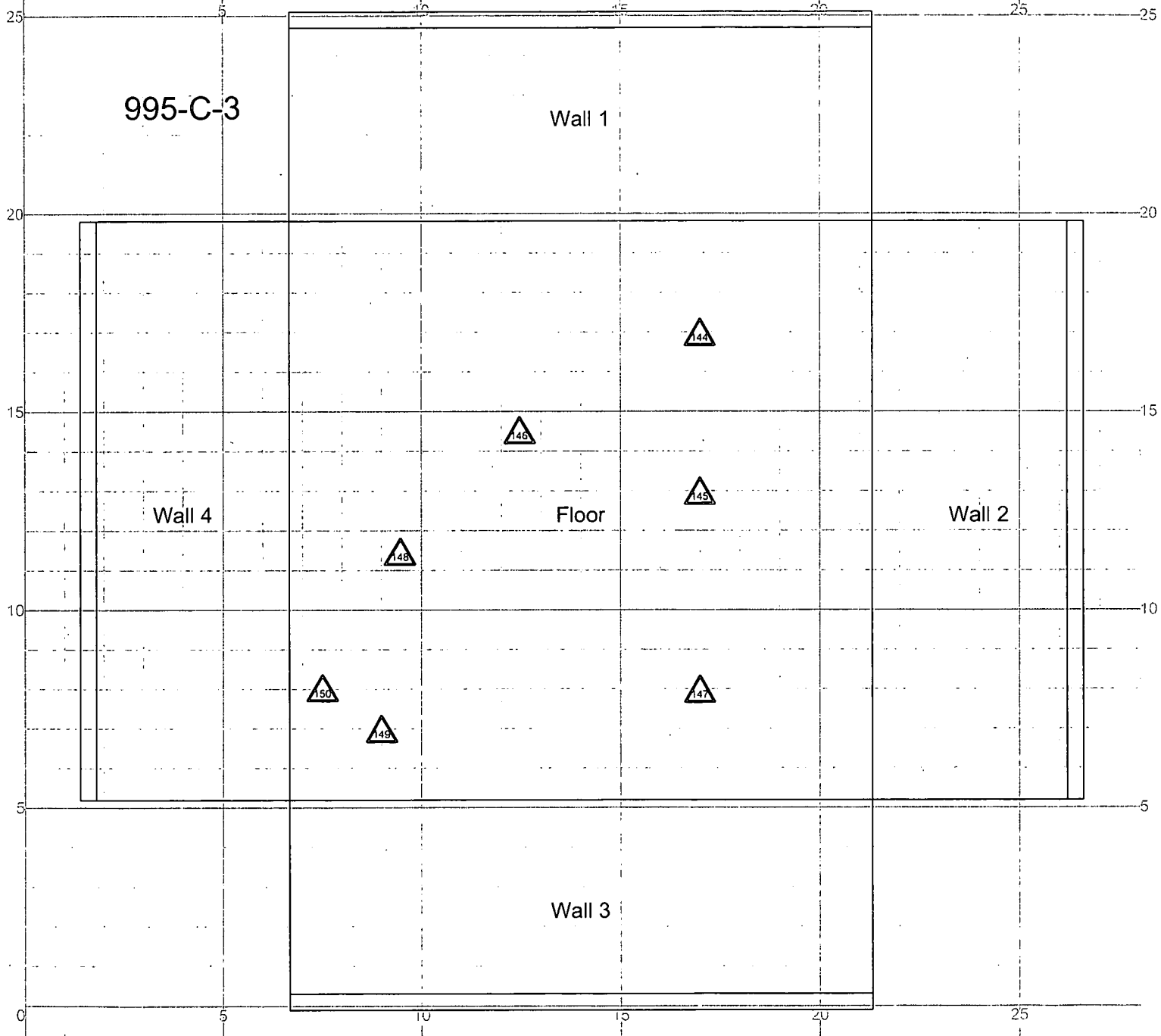
KAISER-HILL COMPANY

MAP ID: 03-0226\995-C-2_BE

Nov. 16, 2004

CHEMICAL SAMPLE MAP

Building 995-C-3
Beryllium



SURVEY MAP LEGEND

- Asbestos Sample Location
- Beryllium Sample Location
- Lead Sample Location
- RCRA/CERCLA Sample Location
- PCB Sample Location
- Open/Inaccessible Area
- Area in Another Survey Unit

N

0 FEET 6

0 METERS 2

1 inch = 6 feet 1 grid sq. = .25 sq. m.

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Rocky Flats Environmental Technology Site

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CH2MHILL Communications Group

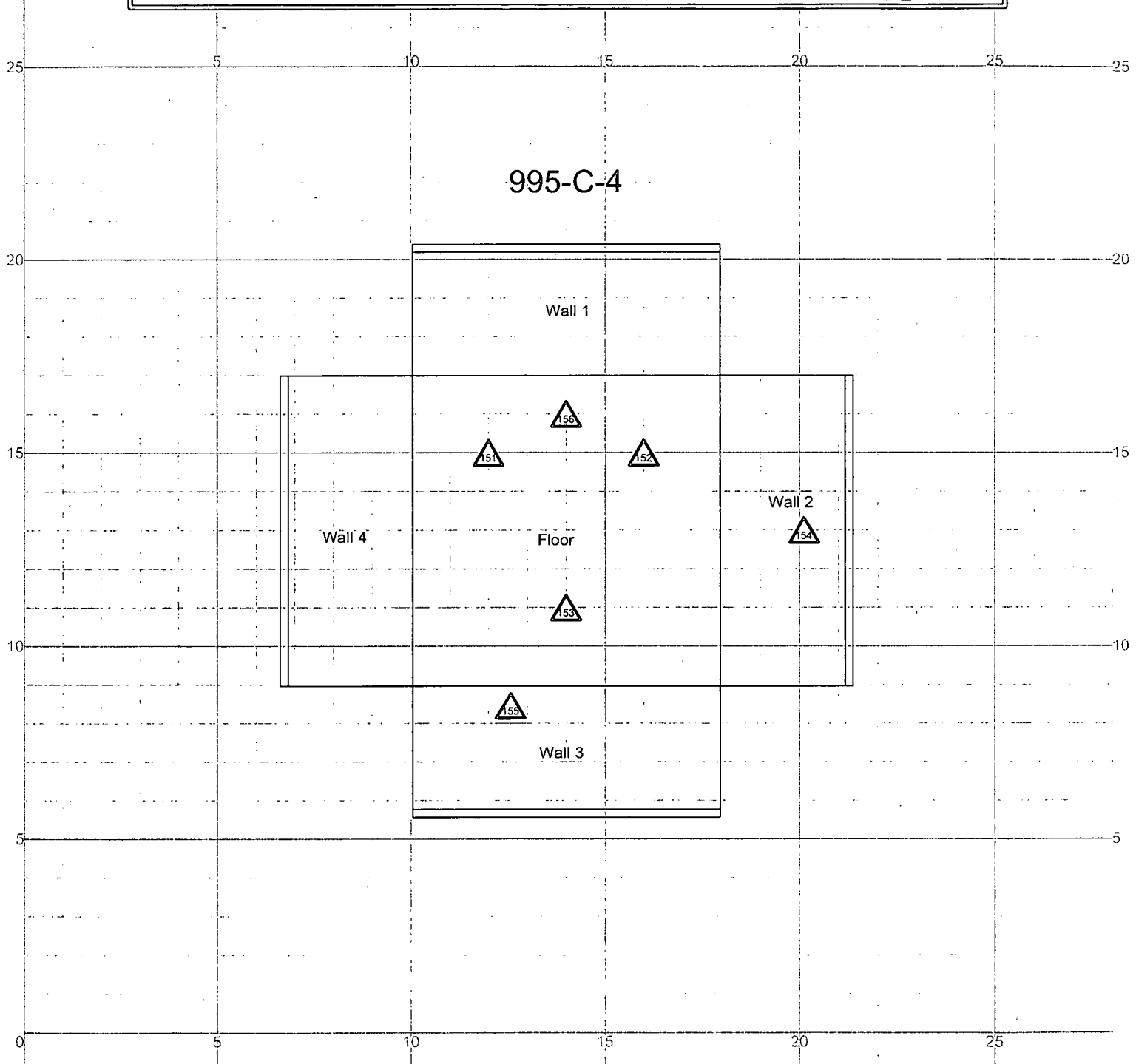
Prepared for: KAISER-HILL COMPANY

MAP ID: 03-0226\995-C-3_BE

Nov. 16, 2004

CHEMICAL SAMPLE MAP

Building 995-C-4
Beryllium



SURVEY MAP LEGEND

- Asbestos Sample Location
- Beryllium Sample Location
- Lead Sample Location
- RCRA/CERCLA Sample Location
- PCB Sample Location
- Open/Inaccessible Area
- Area in Another Survey Unit

N

0 FEET 15
0 METERS 5

1 inch = 12 feet 1 grid sq. = 1 sq. m.

U.S. Department of Energy
Rocky Flats Environmental Technology Site

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CH2MHILL Communications Group

KAISER-HILL COMPANY

MAP ID: 03-0226\995-C-4_BE Nov. 16, 2004

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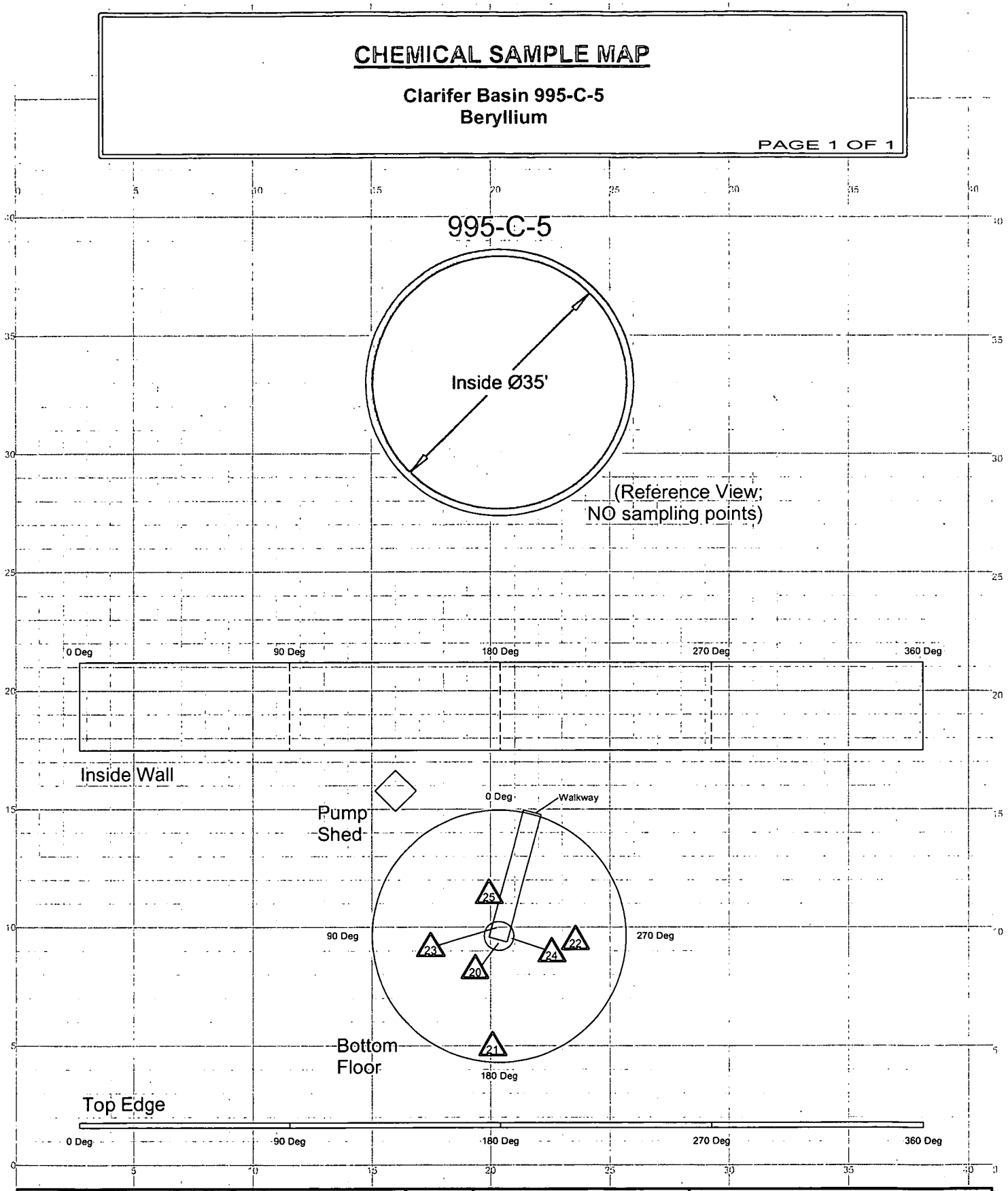
CHEMICAL SAMPLE MAP

Clarifer Basin 995-C-5
Beryllium



SURVEY MAP LEGEND

- Asbestos Sample Location
- Beryllium Sample Location
- Lead Sample Location
- RCRA/CERCLA Sample Location
- PCB Sample Location
- Open/Inaccessible Area
- Area in Another Survey Unit

N

0 FEET 25

0 METERS 8

1 inch = 18 feet 1 grid sq. = 1 sq. m.

U.S. Department of Energy
Rocky Flats Environmental Technology Site

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Communications Group

KAISER-HILL COMPANY

MAP ID: 03-0226\995-C5-BE

Nov. 22, 2004

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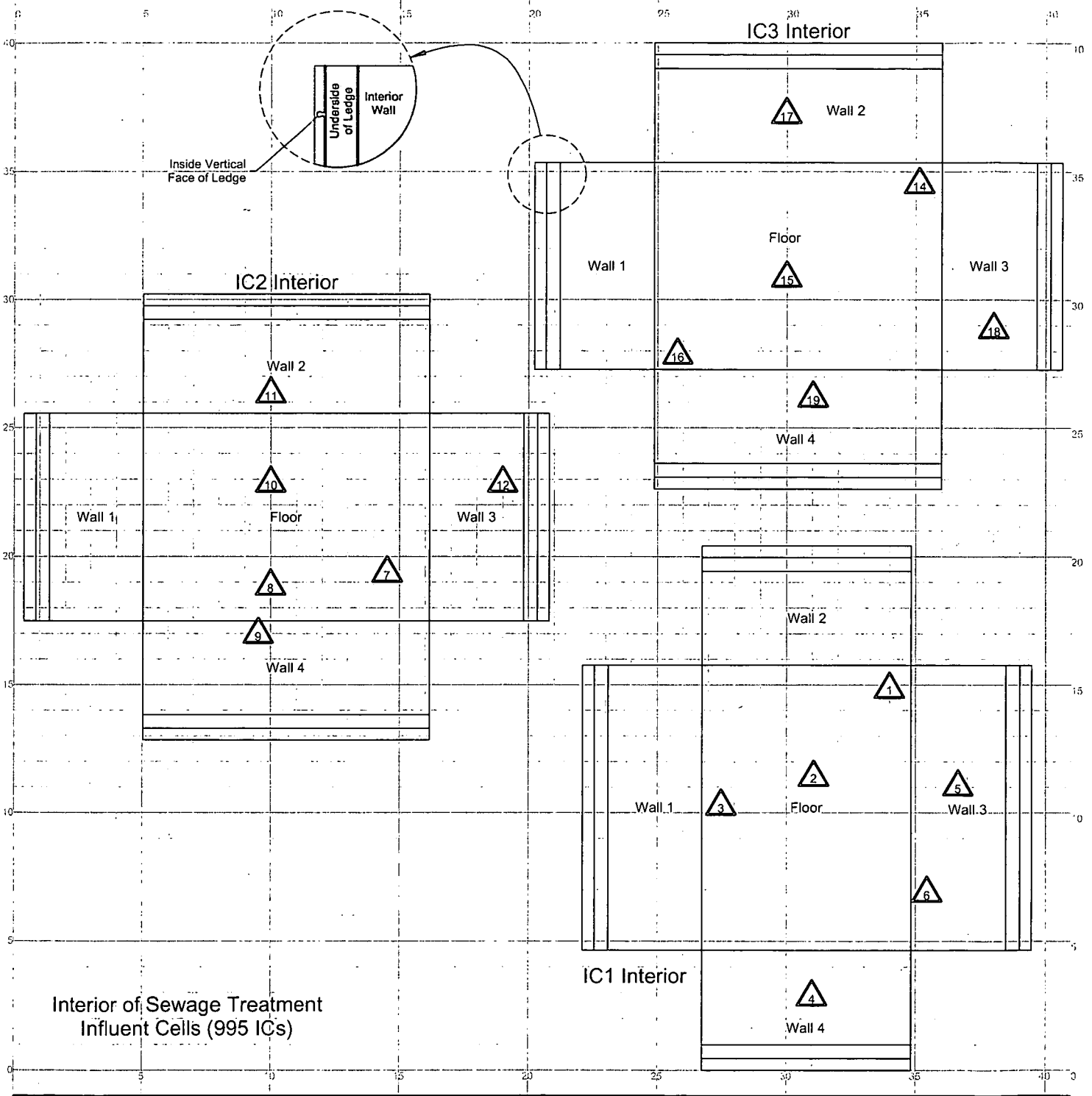
CHEMICAL SAMPLE MAP

Influent Cells 995-IC1, -IC2, -IC3
Beryllium



SURVEY MAP LEGEND

- Asbestos Sample Location
- Beryllium Sample Location
- Lead Sample Location
- RCRA/CERCLA Sample Location
- PCB Sample Location
- Open/Inaccessible Area
- Area in Another Survey Unit

N

0 FEET 25

0 METERS 8

1 inch = 18 feet 1 grid sq. = 1 sq. m.

U.S. Department of Energy
Rocky Flats Environmental Technology Site

Prepared by: GIS Dept. 303-966-7707

CH2MHILL Communications Group

Prepared for: KAISER-HILL COMPANY

MAP ID: 03-0226\995-IC_BE

Nov. 30, 2004

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ATTACHMENT E

Data Quality Assessment (DQA) Detail

DATA QUALITY ASSESSMENT (DQA)

VERIFICATION & VALIDATION OF RESULTS

V&V of the data confirm that appropriate quality controls are implemented throughout the sampling and analysis process, and that any substandard controls result in qualification or rejection of the data in question. The required quality controls and their implementation are summarized in a tabular, checklist format for each category of data – radiological surveys and chemical analyses (specifically beryllium).

DQA criteria and results are provided in a tabular format for each suite of surveys or chemical analyses performed; the radiological survey assessment is provided in Table E-1, asbestos in E-2 and beryllium in E-3. A data completeness summary for all results is given in Table E-4.

All relevant Quality records supporting this report are maintained in the RISS Characterization Project Files. This report will be submitted to the CERCLA Administrative Record for permanent storage within 30 days of approval by the Regulators. All radiological data are organized into Survey Packages, which correlate to unique (MARSSIM) Survey Units. Chemical data are organized by RIN (Report Identification Number) and are traceable to the sample number and corresponding sample location.

Beta/gamma survey designs were not implemented for the Sewage Treatment Plant Buildings in this report based on the conservatism of the transuranic limits used as DCGLs in the unrestricted release decision process. Survey designs were implemented based on the transuranic limits used as DCGLs in the unrestricted release decision process. All survey results were evaluated against, and were less than the Transuranic $DCGL_w$ (100 dpm/100cm^2) and the Uranium $DCGL_w$ (5,000 dpm/100cm^2) unrestricted release limits.

Consistent with EPA's G-4 DQO process, the radiological survey design was optimized by checking actual measurement results (acquired during pre-demolition surveys) against model output with original estimates. Use of actual sample/survey (result) variances in the MARSSIM DQO model confirms that an adequate number of surveys were acquired.

SUMMARY

In summary, the data presented in this report have been verified and validated relative to the quality requirements and project decisions as stated in the original DQOs. All data are useable based on qualifications stated herein and are considered satisfactory without qualification. All media surveyed and sampled yielded results less than their associated action levels and with acceptable uncertainties, except for the following anomalous condition:

- ACM identified in the roofing tar of the basement roof in Building 995 greater than 1% by volume (20% Chrysotile). The composite roofing material is considered Category 1 non-friable asbestos roofing tar and will be managed and disposed of as sanitary waste during demolition activities.

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- The Initial Sample Net Activity in survey unit 995C03 at survey location #5 (156.2 dpm/100cm^2) was greater than the Transuranic DCGL$_W$ (100.0 dpm/100cm^2). The area was sealed, allowed to decay and re-surveyed. The re-survey result (67.4 dpm/100cm^2) was less than the Transuranic DCGL$_W$ and is the value reported in the TSA Data Summary. No further investigation is required.
- Initial Sample Net Activity in survey unit 9953IC at survey locations #2 (120.8 dpm/100cm^2) and #18 (155.6 dpm/100cm^2) were greater than the Transuranic DCGL$_W$ (100.0 dpm/100cm^2). The areas were sealed, allowed to decay and re-surveyed. The re-survey results (79.5 dpm/100cm^2 and 85.7 dpm/100cm^2 respectively) for both locations were less than the transuranic DCGL$_W$ and are the values reported in the TSA Data Summary. No further investigation is required.
- Initial Sample Net Activity in survey unit 974002 at survey location #3 (487.6 dpm/100cm^2) was greater than the Transuranic DCGL$_W$ (100.0 dpm/100cm^2). The area was sealed, allowed to decay and re-surveyed. The re-survey result (11.2 dpm/100cm^2) was less than the transuranic DCGL$_W$ and is the value reported in the TSA Data Summary. No further investigation is required.

Based upon an independent review of the radiological data, it was determined that the original project DQOs satisfied MARSSIM guidance. All facility contamination levels were below applicable unrestricted release levels. Minimum survey requirements were met, sampling/survey protocol was performed in accordance with applicable procedures, survey units were properly designed and bounded, and instrument performance and calibration were within acceptable limits thereby ensuring data accuracy. All results meet the PDS unrestricted release criteria.

Chain of Custody was intact; documentation was complete, hold times were acceptable (where applicable,) and packaging integrity/custody seals were maintained throughout the sampling/analysis process. Level 2 Isolation Controls have been posted to prevent the inadvertent introduction of contamination into the facilities. On this basis, the Sewage Treatment Plant Buildings in this report meet the unrestricted release criteria with the confidences stated herein.

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Table E-1 V&V of Radiological Surveys

Sewage Treatment Plant

V&V CRITERIA, RADIOLGICAL SURVEYS		K-H RSP 16.00 Series MARSSIM (NUREG-1575)		
QUALITY REQUIREMENTS				
	Parameters	**Measure**	**Frequency**	**COMMENTS**
ACCURACY	initial calibrations	90%<x<110%	≥1	Multi-point calibration through the measurement range encountered in the field; programmatic records.
	daily source checks	80%<x<120%	≥1/day	Performed daily/within range.
	local area background: Field	typically < 10 dpm	≥1/day	All local area backgrounds were within expected ranges (i.e., no elevated anomalies.)
PRECISION	field duplicate measurements for TSA	≥5% of real survey points	≥10% of reals	N/A
REPRESENTATIVENESS	MARSSIM methodology: Survey Units 974002, 974001, 977002, 988003, 988A01, 995006, 995C01, 995C02, 995C03, 995C04, 995C05, 9953IC, 995AB1, 995AB2 and 995MST (interior and exterior).	statistical and biased	NA	Random w/ statistical confidence.
	Survey Maps	NA	NA	Random and biased measurement locations controlled/mapped to ±1m.
	Controlling Documents (Characterization Pkg; RSPs)	qualitative	NA	Refer to the Characterization Package (planning document) for field/sampling procedures (located in Project files); thorough documentation of the planning, sampling/analysis process, and data reduction into formats.
COMPARABILITY	units of measure	dpm/100cm^2	NA	Use of standardized engineering units in the reporting of measurement results.
COMPLETENESS	Plan vs. Actual surveys usable results vs. unusable	>95% >95%	NA	See Table E-4 for details.
SENSITIVITY	Detection limits	TSA: ≤ 50 dpm/100cm^2 RA: ≤ 10 dpm/100cm^2	all measures	MDAs ≤ 50% $DCGL_w$ per MARSSIM guidelines (RLC performed to PDS requirements).

Table E-2 V&V of Asbestos Results

Sewage Treatment Plant

V&V CRITERIA, CHEMICAL ANALYSES		DATA PACKAGE		
ASBESTOS	METHOD: EPA 600/R-93/116	LAB ---->	Reservoirs Environmental, Denver, Colorado	
QUALITY REQUIREMENT		RIN ---->	RIN05Z0148 RIN04Z0330 RIN03Z1881	
		Measure	Frequency	COMMENTS
ACCURACY	Calibrations: Initial/continuing	below detectable amounts	≥1	Semi-quantitative, per (microscopic) visual estimation.
PRECISION	Actual Number Sampled LCSD Lab duplicates	all below detectable amounts	≥ 22 samples	Semi-quantitative, per (microscopic) visual estimation.
REPRESENTATIVENESS	COC	Qualitative	NA	Chain-of-Custody intact: completed paperwork, containers w/ custody seals.
	Hold times/preservation	Qualitative	NA	N/A
	Controlling Documents (Plans, Procedures, maps, etc.)	Qualitative	NA	See original Chemical Characterization Package (planning document); for field/sampling procedures (located in project file;) thorough documentation of the planning, sampling/analysis process, and data reduction into formats.
COMPARABILITY	Measurement Units	% by bulk volume	NA	Use of standardized engineering units in the reporting of measurement results.
COMPLETENESS	Plan vs. Actual samples Usable results vs. unusable	Qualitative	NA	Final number of samples at Certified Inspector's discretion, See Table E-4.
SENSITIVITY	Detection limits	<1% by volume	All measures	N/A

Table E-3 V&V of Beryllium Results

Sewage Treatment Plant

V&V CRITERIA, CHEMICAL ANALYSES		DATA PACKAGE		
BERYLLIUM	**Prep: NMAM 7300** **METHOD: OSHA ID-125G**	**LAB ---->**	Johns Manville Corp. Littleton, Colorado and Reservoirs Environmental, Denver, Colorado	
QUALITY REQUIREMENTS		**RIN ---->**	RIN03Z1880 RIN05D0170 RIN05D0270	
		Measure	**Frequency**	**COMMENTS**
ACCURACY	**Calibrations** Initial	linear calibration	≥1	All results were below associated action levels.
	Continuing	80%<%R<120%	≥1	
	LCS/MS	80%<%R<120%	≥1	
	Blanks - lab & field	<MDL	≥1	
	interference check std (ICP)	NA	NA	
PRECISION	LCSD	80%<%R<120% (RPD<20%)	≥1	
	field duplicate	all results < RL	≥1	
REPRESENTATIVENESS	COC	Qualitative	NA	
	hold times/preservation	Qualitative	NA	
	Controlling Documents (Plans, Procedures, maps, etc.)	Qualitative	NA	
COMPARABILITY	measurement units	ug/100cm^2	NA	
COMPLETENESS	Plan vs. Actual samples usable results vs. unusable	>95% >95%	NA	
SENSITIVITY	detection limits	MDL of 0.012 ug/100cm^2	all measures	

Table E-4 Data Completeness Summary

Sewage Treatment Plant

ANALYTE	Building/Area/Unit	Sample Number Planned (Real & QC)[A]	Sample Number Taken (Real & QC)	Project Decisions (Conclusions) & Uncertainty	Comments (RIN, Analytical Method, Qualifications, etc.)
Asbestos	Building 988 (interior and exterior)	0 samples	3 samples (2 interior/1 exterior)	No ACM present, all results are less than 1% by volume	40 CFR763.86; CCR 1001-10; EPA 600/R-93/116 RIN03Z1881: sample numbers 988-06122003-315-201 through 988-06122003-315-203 9 (map locations 1-3)
Asbestos	Building 988A (interior)	0 samples	1 sample (interior)	No ACM present, all results are less than 1% by volume	40 CFR763.86; CCR 1001-10; EPA 600/R-93/116 RIN04Z0330 – sample number 995/11/10/2003/9/008 (map location 1)
Asbestos	Building 995 (interior)	0 samples	18 samples (interior)	[1]ACM present, one result greater than 1% by volume	40 CFR763.86; CCR 1001-10; EPA 600/R-93/116 RIN03Z1881: sample numbers 995-06122003-315-201 through 995-06122003-315-209 (map locations 1-9) RIN05Z0148: sample numbers 995-10112004-314-001 and 995-10112004-314-002 (map locations 10 and 11) RIN04Z0330: sample numbers 995/11/10/2003/9/001 through 995/11/10/2003/9/007 (map locations 12-18) ACM identified in the roofing tar of the basement roof of Building 995 greater than 1% by volume ACM (20% chrysotile). Refer to Attachment E for discussion.
Beryllium	Building 974 (interior)	5 biased (interior)	10 biased (interior)	No beryllium contamination found at any location, all results are below associated action levels	OSHA ID-125G RIN05D0270: map locations 120-129 No results above action level (0.2ug/100cm^2) or investigative level (0.1 ug/100cm^2).
Beryllium	Building T974A (interior)	5 biased (interior)	9 biased (interior)	No beryllium contamination found at any location, all results are below associated action levels	OSHA ID-125G RIN05D0170: map locations 116-119 RIN03Z1880: map locations 101-105 No results above action level (0.2ug/100cm^2) or investigative level (0.1 ug/100cm^2).

Table E-4 Data Completeness Summary

Sewage Treatment Plant

ANALYTE	Building/Area/Unit	Sample Number Planned (Real & QC)[A]	Sample Number Taken (Real & QC)	Project Decisions (Conclusions) & Uncertainty	Comments (RIN, Analytical Method, Qualifications, etc.)
Beryllium	Building 977 (interior)	5 biased (interior)	10 biased (interior)	No beryllium contamination found at any location, all results are below associated action levels	OSHA ID-125G RIN05D0270: map locations 130-139 No results above action level (0.2ug/100cm^2) or investigative level (0.1 ug/100cm^2).
Beryllium	Building 988 (interior)	5 biased (interior)	10 biased (interior)	No beryllium contamination found at any location, all results are below associated action levels	OSHA ID-125G RIN05D0170: map locations 100-104 RIN03Z1880: map locations 101-105 No results above action level (0.2ug/100cm^2) or investigative level (0.1 ug/100cm^2).
Beryllium	Building 988A (interior)	5 biased (interior)	10 biased (interior)	No beryllium contamination found at any location, all results are below associated action levels	OSHA ID-125G RIN05D0170: map locations 105-109 RIN03Z1880: map locations 101-105 No results above action level (0.2ug/100cm^2) or investigative level (0.1 ug/100cm^2).
Beryllium	Building 995 (interior)	5 biased (interior)	11 biased (interior)	No beryllium contamination found at any location, all results are below associated action levels	OSHA ID-125G RIN05D0170: map locations 110-115 RIN03Z1880: map locations101-105 No results above action level (0.2ug/100cm^2) or investigative level (0.1 ug/100cm^2).
Beryllium	Building 995-AB-1 (interior)	5 biased (interior)	6 biased (interior)	No beryllium contamination found at any location, all results are below associated action levels	OSHA ID-125G RIN05D0170: map locations 132-137 No results above action level (0.2ug/100cm^2) or investigative level (0.1 ug/100cm^2).

Table E-4 Data Completeness Summary

Sewage Treatment Plant

ANALYTE	Building/Area/Unit	Sample Number Planned (Real & QC)[A]	Sample Number Taken (Real & QC)	Project Decisions (Conclusions) & Uncertainty	Comments (RIN, Analytical Method, Qualifications, etc.)
Beryllium	Building 995-AB-2	5 biased (interior)	6 biased (interior)	No beryllium contamination found at any location, all results are below associated action levels	OSHA ID-125G RIN05D0170: map locations 26-30 and 131 No results above action level (0.2ug/100cm^2) or investigative level (0.1 ug/100cm^2).
Beryllium	Building 995-C-1 (interior)	5 biased (interior)	4 biased (interior)	No beryllium contamination found at any location, all results are below associated action levels	OSHA ID-125G RIN05D0170: map locations 157-160 No results above action level (0.2ug/100cm^2) or investigative level (0.1 ug/100cm^2).
Beryllium	Building 995-C-2 (interior)	5 biased (interior)	6 biased (interior)	No beryllium contamination found at any location, all results are below associated action levels	OSHA ID-125G RIN05D0170: map locations 138-143 No results above action level (0.2ug/100cm^2) or investigative level (0.1 ug/100cm^2).
Beryllium	Building 995-C-3 (interior)	5 biased (interior)	7 biased (interior)	No beryllium contamination found at any location, all results are below associated action levels	OSHA ID-125G RIN05D0170: map locations 144-150 No results above action level (0.2ug/100cm^2) or investigative level (0.1 ug/100cm^2).
Beryllium	Building 995-C-4 (interior)	5 biased (interior)	6 biased (interior)	No beryllium contamination found at any location, all results are below associated action levels	OSHA ID-125G RIN05D0170: map locations 151-156 No results above action level (0.2ug/100cm^2) or investigative level (0.1 ug/100cm^2).

Table E-4 Data Completeness Summary

Sewage Treatment Plant

ANALYTE	Building/Area/Unit	Sample Number Planned (Real & QC)[A]	Sample Number Taken (Real & QC)	Project Decisions (Conclusions) & Uncertainty	Comments (RIN, Analytical Method, Qualifications, etc.)
Beryllium	Building 995-C-5 (interior)	5 biased (interior)	6 biased (interior)	No beryllium contamination found at any location, all results are below associated action levels	OSHA ID-125G RIN05D0170: map locations 20-25 No results above action level (0.2ug/100cm^2) or investigative level (0.1 ug/100cm^2).
Beryllium	Building 995-IC1 (interior)	5 biased (interior)	6 biased (interior)	No beryllium contamination found at any location, all results are below associated action levels	OSHA ID-125G RIN05D0170: map locations 1-6 No results above action level (0.2ug/100cm^2) or investigative level (0.1 ug/100cm^2).
Beryllium	Building 995-IC2 (interior)	5 biased (interior)	6 biased (interior)	No beryllium contamination found at any location, all results are below associated action levels	OSHA ID-125G RIN05D0170: map locations 7-12 No results above action level (0.2ug/100cm^2) or investigative level (0.1 ug/100cm^2).
Beryllium	Building 995-IC3 (interior)	5 biased (interior)	6 biased (interior)	No beryllium contamination found at any location, all results are below associated action levels	OSHA ID-125G RIN05D0170: map locations 14-19 No results above action level (0.2ug/100cm^2) or investigative level (0.1 ug/100cm^2).
Radiological	Survey Area 5 Survey Unit: 974002 Building T974A (interior and exterior)	30 α TSA (15 random/15 biased) and 30 α Smears (15 random/15 biased) 2 QC TSA 5% scan	30 α TSA (15 random/15 biased) and 30 α Smears (15 random/15 biased) 2 QC TSA 5% scan	No elevated contamination at any location; all values below PDS unrestricted release levels	Transuranic DCGLs used.

Table E-4 Data Completeness Summary

Sewage Treatment Plant

ANALYTE	Building/Area/Unit	Sample Number Planned (Real & QC)[A]	Sample Number Taken (Real & QC)	Project Decisions (Conclusions) & Uncertainty	Comments (RIN, Analytical Method, Qualifications, etc.)
Radiological	Survey Area 5 Survey Unit: 974001 Building 974 (interior and exterior)	30 α TSA (15 random/15 biased) and 30 α Smears (15 random/15 biased) 2 QC TSA 50% scan of floors; 10% scan of remaining surfaces	30 α TSA (15 random/15 biased) and 30 α Smears (15 random/15 biased) 2 QC TSA 50% scan of floors; 10% scan of remaining surfaces	No elevated contamination at any location; all values below PDS unrestricted release levels	Transuranic DCGLs used.
Radiological	Survey Area 5 Survey Unit: 977002 Building 977 (interior and exterior)	30 α TSA (15 random/15 biased) and 30 α Smears (15 random/15 biased) 2 QC TSA 50% scan of floors; 10% scan of remaining surfaces	30 α TSA (15 random/15 biased) and 30 α Smears (15 random/15 biased) 2 QC TSA 50% scan of floors; 10% scan of remaining surfaces	No elevated contamination at any location; all values below PDS unrestricted release levels	Transuranic DCGLs used.
Radiological	Survey Area 5 Survey Unit: 988003 Building 988 (interior and exterior)	30 α TSA (15 random/15 biased) and 30 α Smears (15 random/15 biased) 2 QC TSA 5% scan	30 α TSA (15 random/15 biased) and 30 α Smears (15 random/15 biased) 2 QC TSA 5% scan	No elevated contamination at any location; all values below PDS unrestricted release levels	Transuranic DCGLs used.

Table E-4 Data Completeness Summary

Sewage Treatment Plant

ANALYTE	Building/Area/Unit	Sample Number Planned (Real & QC)[A]	Sample Number Taken (Real & QC)	Project Decisions (Conclusions) & Uncertainty	Comments (RIN, Analytical Method, Qualifications, etc.)
Radiological	Survey Area 5 Survey Unit: 988A01 Building 988A (interior and exterior)	30 α TSA (15 random/15 biased) and 30 α Smears (15 random/15 biased) 2 QC TSA 25% scan	30 α TSA (15 random/15 biased) and 30 α Smears (15 random/15 biased) 2 QC TSA 25% scan	No elevated contamination at any location; all values below PDS unrestricted release levels	Transuranic DCGLs used.
Radiological	Survey Area 5 Survey Unit: 995006 Building 995 (interior and exterior)	45 α TSA (15 random/30 biased) and 45 α Smears (15 random/30 biased) 3 QC TSA 5% scan	45 α TSA (15 random/30 biased) and 45 α Smears (15 random/30 biased) 3 QC TSA 5% scan	No elevated contamination at any location; all values below PDS unrestricted release levels	Transuranic DCGLs used.
Radiological	Survey Area 5 Survey Unit: 995C01 Building 995-C-1 Clarifier Basin (interior)	25 α TSA (15 random/10 biased) and 25 α Smears (15 random/10 biased) 2 QC TSA 25% scan	25 α TSA (15 random/10 biased) and 25 α Smears (15 random/10 biased) 2 QC TSA 25% scan	No elevated contamination at any location; all values below PDS unrestricted release levels	Transuranic DCGLs used.

Table E-4 Data Completeness Summary

Sewage Treatment Plant

ANALYTE	Building/Area/Unit	Sample Number Planned (Real & QC)[A]	Sample Number Taken (Real & QC)	Project Decisions (Conclusions) & Uncertainty	Comments (RIN, Analytical Method, Qualifications, etc.)
Radiological	Survey Area 5 Survey Unit: 995C02 Building 995-C-2 Clarifier Basin (interior)	25 α TSA (15 random/10 biased) and 25 α Smears (15 random/10 biased) 2 QC TSA 25% scan	25 α TSA (15 random/10 biased) and 25 α Smears (15 random/10 biased) 2 QC TSA 25% scan	No elevated contamination at any location; all values below PDS unrestricted release levels	Transuranic DCGLs used.
Radiological	Survey Area 5 Survey Unit: 995C03 Building 995-C-3 Clarifier Basin (interior)	25 α TSA (15 random/10 biased) and 25 α Smears (15 random/10 biased) 2 QC TSA 25% scan	25 α TSA (15 random/10 biased) and 25 α Smears (15 random/10 biased) 2 QC TSA 25% scan	No elevated contamination at any location; all values below PDS unrestricted release levels	Transuranic DCGLs used. Initial Sample Net Activity at location 5 (156.2 dpm/100cm^2) was greater than the Transuranic $DCGL_W$ (100.0 dpm/100cm^2). The area was sealed, allowed to decay and re-surveyed. The re-survey result was less than the transuranic $DCGL_W$ and is the value reported in the TSA Data Summary. No further investigation is required.
Radiological	Survey Area 5 Survey Unit: 995C04 Building 995-C-4 Clarifier Basin (interior)	25 α TSA (15 random/10 biased) and 25 α Smears (15 random/10 biased) 2 QC TSA 25% scan	25 α TSA (15 random/10 biased) and 25 α Smears (15 random/10 biased) 2 QC TSA 25% scan	No elevated contamination at any location; all values below PDS unrestricted release levels	Transuranic DCGLs used.

Table E-4 Data Completeness Summary

Sewage Treatment Plant

ANALYTE	Building/Area/Unit	Sample Number Planned (Real & QC)[A]	Sample Number Taken (Real & QC)	Project Decisions (Conclusions) & Uncertainty	Comments (RIN, Analytical Method, Qualifications, etc.)
Radiological	Survey Area 5 Survey Unit: 995C05 Building 995-C-5 Clarifier Basin (interior)	20 α TSA (15 random/5 biased) and 20 α Smears (15 random/5 biased) 2 QC TSA 20% scan	20 α TSA (15 random/5 biased) and 20 α Smears (15 random/5 biased) 2 QC TSA 20% scan	No elevated contamination at any location; all values below PDS unrestricted release levels	Transuranic DCGLs used.
Radiological	Survey Area 5 Survey Unit: 9953IC Building 995, Influent Cells IC1, IC2 and IC3 (interior and exterior)	35 α TSA (30 random/5 biased) and 35 α Smears (30 random/5 biased) 2 QC TSA 20% scan	35 α TSA (30 random/5 biased) and 35 α Smears (30 random/5 biased) 2 QC TSA 20% scan	No elevated contamination at any location; all values below PDS unrestricted release levels	Transuranic DCGLs used. Initial Sample Net Activity at survey locations #2 (120.8 dpm/100cm^2) and #18 (155.6 dpm/100cm^2) were greater than the Transuranic $DCGL_W$ (100.0 dpm/100cm^2). The areas were sealed, allowed to decay and re-surveyed. The re-survey results for both locations were less than the transuranic $DCGL_W$ and are the values reported in the TSA Data Summary. No further investigation is required.
Radiological	Survey Area 5 Survey Unit: 995AB1 Building 995-AB-1 Aeration Basin (interior)	30 α TSA (15 random/15 biased) and 30 α Smears (15 random/15 biased) 2 QC TSA 25% scan	30 α TSA (15 random/15 biased) and 30 α Smears (15 random/15 biased) 2 QC TSA 25% scan	No elevated contamination at any location; all values below PDS unrestricted release levels	Transuranic DCGL used.

Table E-4 Data Completeness Summary

Sewage Treatment Plant

ANALYTE	Building/Area/Unit	Sample Number Planned (Real & QC)[A]	Sample Number Taken (Real & QC)	Project Decisions (Conclusions) & Uncertainty	Comments (RIN, Analytical Method, Qualifications, etc.)
Radiological	Survey Area 5 Survey Unit: 995AB2 Building 995-AB-2 Aeration Basin (interior)	30 α TSA (15 random/15 biased) and 30 α Smears (15 random/15 biased) 2 QC TSA 25% scan	30 α TSA (15 random/15 biased) and 30 α Smears (15 random/15 biased) 2 QC TSA 25% scan	No elevated contamination at any location; all values below PDS unrestricted release levels	Transuranic DCGL used.
Radiological	Survey Area 5 Survey Unit: 995MST Building 995 – Miscellaneous Structures (above ground pipes, supports and equipment)	50 α TSA (15 random/35 biased) and 50 α Smears (15 random/35 biased) 2 QC TSA 1 m. scan of pipe or structure at TSA location; 15% scan of asphalt/concrete`	50 α TSA (15 random/35 biased) and 50 α Smears (15 random/35 biased) 2 QC TSA 1 m. scan of pipe or structure at TSA location; 15% scan of asphalt/concrete`	No elevated contamination at any location; all values below PDS unrestricted release levels	Transuranic DCGL used.